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ABSTRACT

The major purpose of this study was to determine whether significant differences in morale existed among teachers employed by rural school districts. Major hypotheses dealt with the combination of biographical variables that best predict teacher morale, differences in morale among teachers grouped by salary level, and differences in morale among teacher grouped according to level of salary increase. The research sample of 46 school districts was selected from all high school districts in North Dakota whose 1968-69 high school enrollment was 400 or less in grades 9-12. The Purdue Teacher Opinionaire (PTO) was distributed to 809 teachers; 545 responses were used in the analysis. The PTO contained a total morale score and 10 factor scores relation to teacher rapport with principal, satisfaction with teaching, rapport among teachers, teacher salary, teacher load, curriculum issues, teacher status, community support of education, school facilities and services, and community pressures. Statistical techniques used included stepwise backward multiple linear regression, analysis of variance, and analysis of covariance. When the PTO total morale score was used as the criterion, the significant predictors of morale were educational preparation, years of teaching experience, and age. (Author/JH)

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AN EXPERIMENTAL STUDY OF TEACHER MORALE IN SELECTED SCHOOL DISTRICTS OF NORTH DAKOTA

by

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ABSTRACT

Problem

The major purpose of this study was to determine whether significant differences in morale existed among teachers employed by rural school districts.

The major hypotheses to be tested were formulated from the following questions:

1. What combination of biographical variables best predict teacher morale?
2. What differences in morale exist among teachers grouped according to selected levels of salary?
3. What differences in morale exist among teachers grouped according to different levels of salary increase?
4. What effect do the following biographical variables have on teacher morale: age, sex, educational preparation, years teaching experience, teaching assignment, teachers new to the system or returning, accreditation level of school, rate of teacher turnover and school size?

Procedures

The population consisted of all high school districts in North Dakota whose 1968-69 high school enrollment (grades 9-12) was 400 or less. The research sample of 46 districts was selected from the

population so that it was representative of eight regions into which the state was divided according to the map included in the 1970 North Dakota Title III ESEA State Plan. Teachers within those 46 districts during the 1969-70 school year formed the teacher population for objectives one, two and four. Teachers who taught in the same school district the previous year (1968-69) formed the teacher population for objective three.

The Purdue Teacher Opinionaire (PTO) was used for measuring morale. The Opinionaire contained a total morale score and the following 10 factor scores: (1) teacher rapport with principal, (2) satisfaction with teaching, (3) rapport among teachers, (4) teacher salary, (5) teacher load, (6) curriculum issues, (7) teacher status, (8) community support of education, (9) school facilities and services, and (10) community pressures.

Eight-hundred nine opinionaires were distributed and 545 of them were returned in usable form; a 67 per cent return. The statistical techniques used in the analysis of the data included stepwise backward multiple linear regression, analysis of variance and analysis of covariance using the multiple linear regression approach.

Results and Conclusions

The findings of this study support the following general conclusions:

1. When the PTO total morale score was used as the criterion, the significant predictors of morale were educational preparation, years of teaching experience and age.

2. Teachers who belonged to the lowest salary group scored significantly higher on the factor 2 variable of satisfaction with teaching than did the higher salaried groups.

3. Teachers who belonged to the larger per cent of salary increase groups had significantly higher morale scores on the factor 4 variable of teacher salary than did the groups having lower salary increases.

4. No significant differences in morale were found when teachers were grouped according to their age.

5. Female teachers had significantly higher morale scores than male teachers when factors 2, 7, and 8 were used as criteria.

6. Teachers having the least amount of education had significantly higher morale scores than did the better educated teachers when factors 1, 4-8, and total score were used as the criteria.

7. The more experienced teachers had significantly higher morale when factors 1, 2, 8, 9 and total score were used as the criteria.

8. Elementary teachers (K-8) had significantly higher morale scores than secondary teachers when factors 2, 4-8 and total score were used as the criteria.

9. No significant differences in morale were found when teachers were grouped according to their school district's accreditation rating or when teachers were grouped according to whether they were new or returning teachers to their school district.

10. Teachers from school districts having a low rate of teacher turnover had significantly higher morale than did high teacher turnover districts when factors 2, 4-7, 9 and total score were used as the criteria.

11. Teachers from the larger schools had significantly higher morale than teachers from smaller schools when factors 2-7, 9 and total score were used as the criteria.

CHAPTER I

INTRODUCTION

Rationale for the Study

Morale is a many faceted and complex phenomenon which is considered to be an important element in every educational setting. Blocker and Richardson (1963) stated that morale, as a term, was virtually unknown prior to World War I, and that it received little attention until after World War II. Researchers including Burton (1938), Oppenheimer and Britton (1952), Zischka (1960), and Blocker and Richardson (1963) have indicated that morale has been studied extensively in industrial and military settings but to a much lesser degree in educational settings.

The Board of Education of the City of New York (1961, p. 1), made the following suggestions and recommendations concerning the benefits from studying teacher morale:

1. Administrators should provide sound democratic leadership and emphasize wholesome human relationships in the administrative process.
2. Administrators should develop better policies and procedures for recruitment, employment, orientation, and evaluation of teachers.
3. There should be periodic studies of teacher morale rather than only in time of difficulty and crisis.

Richards (1964) maintained the fact that one or more of every four teachers in his study expressed unsatisfactory attitudes

toward nearly one-third of the items concerning their job, supervision, public relations, and opportunities for advancement on a morale questionnaire indicated that there was a great need to study teacher morale.

The importance of morale in bringing about individual and group achievement has been recognized since the early 1950's. Many students of morale believe that high morale on the part of the teacher and the student sets up an ideal situation in which the teacher best accomplishes educational objectives, and the student makes his greatest achievement (Anderson, 1952; Koura, 1963; and Spencer, 1962).

Provost (1964, p. 54) reported that:

> Unless nationwide school improvement programs take teacher self-image and morale into account, they will be doomed to failure. Teacher morale may be the most important single factor affecting the pupils' academic success and self-image in the school setting.

Purposes and Objectives of the Study

The major purpose of this study was to determine whether significant differences in morale exist among teachers employed by rural school districts.

The major hypotheses to be tested were formulated from the following questions:

1. What combination of biographical variables best predict teacher morale?
2. What differences in morale exist among teachers grouped according to selected levels of salary?
3. What differences in morale exist among teachers grouped according to different levels of salary increases received?

4. What effect do the following variables have on teacher morale: (a) age, (b) sex, (c) educational preparation, (d) years teaching experience, (e) teaching assignment, (f) new or returning to the school district, (g) school accreditation level, (h) rate of teacher turnover, (i) school size?

Assumptions Underlying the Study

This study was based on the assumption that high teacher morale is a necessity for an effective educational program. It was assumed that the Purdue Teacher Opinionaire is a valid and reliable instrument for the purpose of measuring teacher morale.

Since every effort was made to guarantee anonymity, the responses to the one hundred items on the Purdue Teacher Opinionaire were accepted as true reflections of the teachers' feelings regarding these items.

Limitation of the Study

A limitation of this study was that teacher morale is not independent of outside factors such as the effect peer group or administrative pressure might have upon it. In fact, morale is generally thought to be a product of the interaction between an individual and his environment.

Studies by Corwin (1963) and Westfall (1967), however, have indicated that the limitations cited were not particularly serious. Corwin indicated that the presence of staff conflict due to various activities of several strong personalities striving for improvement

of their teaching situations was not necessarily an indication of low morale. It was recognized that many factors external to the individual influence teacher morale. However, morale is generally concerned with how one perceives his particular situation, independent of what might actually exist. Westfall reported that in most school systems one should expect a wide range of morale differences among teachers. The different cultural backgrounds, experiences, and aspirations of teachers in any school influence their morale. Therefore, teacher responses to the Opinionaire items will be regarded as their true feelings concerning each item statement in regard to their teaching situation with no attempt to interpret how these responses might have been influenced by other teachers, teacher groups, or administrators.

The analysis of the data was limited by the statistical procedure used to analyze the data. Analysis of covariance using the multiple linear regression approach was one method employed to test the data. The variables which were found to be significant predictors of the Purdue Teacher Opinionaire total morale score when the variables were entered into a stepwise backward regression procedure were utilized as the control variables. A limitation of the study was that the control variables found to be significant predictors of the total score were not always the best predictor variables of the other ten Purdue Teacher Opinionaire factor scores. Thus, when the factors were used as the criteria in subsequent data analyses some of the statistical control may have been lost.

The study considered factors related to the morale of teachers in the forty-six schools surveyed and made no comparisons with other schools. Consequently, generalizations will not be made to any population other than the teachers who responded to the Opinionaire.

Significance of the Study

In view of the apparent concern regarding recruitment and retention of teachers who would be willing to live and teach in a rural setting, this study would seem to offer suggestions for those persons who are responsible for such efforts. However, additional study should be undertaken to verify findings in other settings. To the administrators and teachers of the forty-six schools surveyed, this study would seem to have particular significance since it will be possible to generalize to these settings. The findings may have definite implications regarding the educational effectiveness of the schools studied and the teachers who staff them.

The factors or variables that affect teachers and their teaching should be of concern to all those who desire to improve the teaching and learning situation.

Definition of Key Terms

Definitions of key terms used in this research follow:

Morale: The professional interest and enthusiasm that a teacher reveals toward the achievement of individual and group goals in a given school situation. Operationally, for this study, teacher morale is defined to be the factor scores and total score obtained from the one-hundred items comprising the Purdue Teacher Opinionaire.

Rural Population: The rural population comprises all people who reside in cities or towns with 2,500 or fewer inhabitants, or who live in the open country.

Salary: The amount of income a teacher received during the 1969-70 school year from the school district.

Salary Raise Levels: The per cent of salary increase that a teacher received between the 1968-69 school year and the 1969-70 school year.

School Accreditation Level: The numerical rating system that the North Dakota Department of Public Instruction gives school districts. School districts may receive a numerical rating of 1, 2, 3, or non-accredited. Number 1 is the highest rating and non-accredited is the lowest rating. The study included only those school districts rated 2 or lower; i.e., the predominantly rural school districts.

Staff Turnover: The percentage of teachers in a school district not returning between 1968-69 and 1969-70 school years.

Teacher: A person with at least one-half time or more instructional responsibilities in the classroom.

Years Teaching Experience: The number of years of educational experience in public or private schools.

CHAPTER II

REVIEW OF LITERATURE

Introduction

Blocker and Richardson (1963, p. 200) reported that:

> During the last twenty-five years, educational literature has seen a rapid proliferation of articles dealing with morale, a term which was virtually unknown prior to World War I and which received scant attention of educators until the advent of World War II.

As long ago as 1938, Burton (p. 218) pointed out: " . . . the lack of objective investigation of morale (in education) as compared with the insights developed by industry." In 1952, J. J. Oppenheimer and J. H. Britton (p. 384) similarly observed that" . . . institutions of higher learning have lagged far behind industries in studying staff morale."

A number of writers have used the term job satisfaction as being synonymous with teacher morale (McCluskey and Strayer, 1940; Chase, 1951; Gordon, 1963). Gordon, in his review of teacher morale and job satisfaction, reported that the terms morale and job satisfaction are used synonymously in the literature and are closely related.

> Job satisfaction is commonly used to refer to the reactions of individuals to specific elements in the working environment; whereas, morale often is applied to the general level of satisfaction and enthusiasm of individuals and groups (Gordon, 1963, p. 387).

Locke (1968) reported that, since the publication of Roethlisberger and Dickinson's Management and the Worker and Hoppock's monograph in the 1930's on job satisfaction, interest in the topic of job attitude has increased rapidly. Locke reported that as of 1955, over 2,000 articles had been published on the subject. "Despite this proliferation of studies, our understanding of the causes of job satisfaction has not increased substantially in the past 30 years" (Locke, p. 1).

There have been many attempts to define morale. Whitlock (1959) listed thirty-five definitions by various authors in the field of sociology, psychology, industrial management, military and education. The following attempts to define the concept are an indication of the scope and importance of morale as a factor to consider in organizations:

1. Culbertson, Jacobson and Reller (1960, p. 421) define morale "as a climate of satisfaction arising from good interpersonal relations and a feeling among employees that they are progressing toward mutually accepted and worthwhile goals.
2. Yoder (1948, p. 439), a student of industrial relations, describes morale as "the positive aspect of a condition of which the negative side is unrest."
3. Spalding (1946, p. 79) claims that "morale is made up of the attitudes, emotions and consequent behaviors of individuals." He states further that "morale is one of those intangibles of the spirit which is essential if any group is to put forth its best cooperative effort" (p. 7).

4. Good (1959, p. 352) defines morale as "the collective feelings and attitudes of a teacher group related to their duties, responsibilities, goals, supervisors and fellow workers . . ."

5. Locke (1968, p. 10) defines job satisfaction or morale as:

> . . . the pleasurable emotional state resulting from the appraisal of one's job as achieving or facilitating the achievement of one's job values. Job satisfaction is the unpleasurable emotional state resulting from the appraisal of one's job as frustrating or blocking the attainment of one's job values or as entailing disvalues. Job satisfaction and dissatisfaction are a function of the perceived relationship between what one wants from one's job and what one perceives it as offering or entailing.

It is usually assumed that high teacher morale is good for educational systems. Anderson (1953, p. 211) attempted to objectively verify this view by saying " . . . teachers in secondary schools showing relatively high student achievement appear to have higher morale than teachers in schools of relatively low student achievement." However, Viteles (1953) in a broad survey of the relations of morale to organizational behavior, was unable to find clear-cut evidence that high morale and organizational effectiveness were highly correlated.

Conceptual Definition

For research purposes morale has been defined according to the conceptual predilections of the researchers. In 1967, Bentley and Rempel reported that some authorities consider morale to be the emotional and mental reaction of a person to his job. Morale may best be conceived as a continuous variable. The level of morale is then determined by the extent to which an individual's needs are satisfied, and the extent to which the individual perceives satisfaction as stemming from the total job situation. High morale is evident when there

is interest in and enthusiasm for the job. What is important in morale is what the person believes and feels, rather than the conditions that exist as perceived by others (Bentley and Rempel, 1967a).

Recently, analysts have been thinking of morale within the framework of organizational theory and the problems of maintaining the organization. In this approach, two components are usually involved: (1) perceived productivity and progress toward the achievement of the tasks of the organization (task-achievement), and (2) perceived job satisfaction or the satisfaction of individual needs through the interaction of the participant in his role within the work group and the total organization (needs-satisfaction) (Lonsdale, 1964).

The relationship between these two components has been conceptualized by Guba (1958). Guba considered morale to be the interaction and relationships among role-expectation, needs-dispositions, and institutional goals. The morale of an individual depends on how well he can anticipate satisfying role-expectations and personal needs-dispositions simultaneously (belongingness); i.e., how clearly he perceives logical appropriateness of his role expectations with the goals of the institution (rationality).

Stogdill (1961) conceived morale as the degree of freedom from restraint exhibited by a group working toward a goal. The motivation of the individual and the group provides the potential for morale; however, the level of morale will be dependent both upon the strength of the motivation and the freedom to act.

Locke (1968) reported that Stogdill considered morale as only one of three group outputs; the other two were group productivity and

group integration. Productivity referred to the outcomes that were designed to satisfy the expectations and values of the group as a whole. Productivity on the job may have to be achieved at a cost to the satisfaction of individual needs. Group integration represents the extent to which the group can maintain its structure and its operation under stress. The congruence of individual and group goals, a clearly differentiated role structure, and support of group leadership are the elements that contribute to group integration.

It can be seen in both Stogdill's and Guba's theories, that morale is conceived as an effect resulting from the successful interaction among individual needs, incentives, and organizational goals. These two theoretical considerations support the conceptual definition of morale cited in the studies by Rempel and Bentley. In their studies, "Morale refers to the professional interest and enthusiasm that a person displays toward the achievement of individual and group goals in a given job situation" (Rempel and Bentley, 1963; Bentley and Rempel, 1963). This definition shall serve as the definition of morale used in this study.

Bentley and Rempel (1967a) reported that this definition recognizes the satisfaction of both individual and group needs and their effective harmonization as the basis for morale. Bentley and Rempel quoted Childs as saying in 1941 that given a certain task to be accomplished by the groups:

> Morale pertains to the factors in the individual's life that bring about a hopeful and energetic participation on his part so that his efforts enhance the effectiveness of the group in accomplishing the task in hand (p. 3).

Multidimensional Aspects of Morale

Investigators of morale in fields other than education have emphasized that morale is multidimensional and not a unidimensional concept (Wherry, 1958; Mahoney, 1958; Baher and Renck, 1958; Locke, 1968). According to educational researchers of recent years (Call, 1958; Redefer, 1959; Blocker and Richardson, 1963; Rempel and Bentley, 1964), morale studies of education in the past have focused on the unidimensional concept rather than the multidimensional aspects of morale.

Wood and LeBold (1967) reported that morale or job satisfaction has traditionally been interpreted as a unidimensional concept. This viewpoint assumes that any positive job related or environmentally-related element offering satisfaction to a worker would create dissatisfaction in its absence. As a result, the unidimensional theory requires only an overall job satisfaction measure.

Herzberg's (1959) two-factor job satisfaction theory was the first significant step toward a multidimensional description of job attitudes. Herzberg concluded from his study of engineers and accountants that only intrinsic work elements called satisfiers (recognition, achievement, accomplishment, responsibility, and advancement) could generate job satisfaction or morale. Conversely, extrinsic elements, or dissatisfiers (supervision, wages, interpersonal relations, company policy, working conditions) gave rise to job dissatisfaction.

Wood and Lebold (1967) concluded from this brief account of the two factor model that Herzberg imposed multidimensionality by

classifying work elements on the basis of attitudes associated with a given occupation and associated environment. However, further research testing the theory has convincingly shown that the intrinsic-extrinsic dichotomy does not adequately reflect the sources of positive and negative job attitudes. In short, both "satisfiers" and "dissatisfiers" appear to be involved in both job satisfaction and dissatisfaction (Graen, 1966; Burke, 1966; Dunnette et al., 1967).

Morale is, therefore, considered to be multidimensional, and only morale measuring instruments that take into consideration the multidimensional aspects of morale should be utilized in its study.

The following section reviews the major attempts at developing morale measuring instruments.

Morale Measurement and Key Studies

> Many different instruments and devices to measure morale and job satisfaction have been developed. Some, supposedly, have general application to any kind of job; others have been prepared appropriate to a particular occupation, i.e., nursing, railroad work, government employment, etc." (Bentley and Rempel, 1967a, p. 6).

Scales have been developed at Colorado University, New York University, and Purdue University specifically to measure teacher morale. The purpose of this section will be to review these key teacher morale studies as well as several earlier attempts.

One of the earliest efforts at measuring morale was attempted by Hoppock in 1935. He administered four simple attitude scales to 500 teachers, combined the results, and determined those items that discriminated between high and low scoring teachers. His results indicated that the satisfied enjoyed better relationships with

superiors and associates, showed less evidence of emotional maladjustment, and taught in cities of above ten thousand in population.

McCluskey and Strayer (1940) continued Hoppock's research and developed a teachers' situations test by having teachers identify experiences that caused them extreme satisfaction or dissatisfaction. This instrument included all aspects of the teaching environment. McCluskey and Strayer concluded that nearly every aspect of the teaching environment is involved in adjustment to the job situation.

More recently several teacher morale studies have been conducted specifically for the purpose of developing and testing morale measuring instruments. The work of Suehr (Colorado University), Redefer (New York University), and Bentley and Rempel (Purdue University) will be reviewed.

Suehr's (1962) study was unusual in both emphasis and technique. The purpose was to develop an instrument that would reveal not only environmental factors affecting morale, but, in addition, would give an indication of the respondent's personality structure. Rather than use a questionnaire to measure morale as others had done, he believed that a better method was to develop an instrument containing incomplete sentences. One-hundred incomplete sentences were created as items that measured morale. These one-hundred items were then submitted to sixty-seven teachers from various sections of the United States in order to determine which items were most suitable for inclusion in the instrument. From the responses, Suehr retained forty items.

In arriving at a scoring procedure from the resultant instrument, titled Incomplete Sentence Form, three scorers were selected on the basis of training, public school experiences, general perception,

and recommendations of the advisory committee. There was no contact between scorers; however, they were given instructions to assign each sentence a point value based on the following five point scale; 0 for highly positive statements--denoting high morale, 1 for slightly positive statements, 2 for neutral statements, 3 for slightly negative statements, and 4 for highly negative statements--denoting low morale. The instrument was found to discriminate sharply between high and low morale teachers in the Boulder, Colorado, Public Schools.

Starting in 1955, Redefer (1963) of New York University directed and coordinated the research activities of fifty graduate students in the development of a series of teacher morale measuring instrument. The following instruments containing more than three-hundred fifty questions were developed:

1. Instrument 100--This instrument (Teacher Opinionaire) was the basic morale measuring device and consisted of one-hundred six statements with agree or disagree responses. The statements were organized under nine headings and were randomly distributed throughout the instrument.

2. Instrument 101--About You and Your Community had forty-two items requesting factual information, opinions, and judgment about teachers and their relations with the school community where the teacher lives.

3. Instrument 102--You and Your School Faculty contained seventy questions on the teacher and his relations with his colleagues and with the school administration.

4. Instrument 103--About You as a Professional Person consisted of four parts: (1) thirty-eight items concerning the teachers' attitude

toward the educational profession; (2) thirty-seven statements concerning the teacher's satisfaction with his way of life; (3) thirty-five statements asking questions about his present position; and (4) twenty-nine questions about selected personal data, such as salary, years of experience, wife's occupations, education, and outside employment.

5. Instrument 104--Social and Professional Relations was a test developed to reveal the personal structuring of a faculty and the personal distance between its members.

6. Instrument 105--If You Were, was designed to reveal the informal organization of the faculty by asking the teachers to act as if they were the principal and to select various committees for various purposes.

7. Instrument 106--Speaking Frankly, used the incomplete sentences technique, asking the reader to finish the sentence with the first phrase that came to mind.

Due to questions raised from the interviews and anecdotal analyses, the last three experimental instruments were developed in addition to the first four cited above.

Redefer administered the seven instruments to a population of more than five thousand teachers in twenty-four cooperating school systems. Redefer found the instruments to adequately measure the morale of teachers. Redefer's findings are reported later in the chapter.

Bentley and Rempel's development of the Purdue Teacher Opinionaire is the last instrument development study that will be considered. In Bentley and Rempel's (1967a, p. 7) words:

> Perhaps the most promising approach to the problem of measuring teacher morale, at the present time, involves the use of factor analysis methods. This approach involves placing

what is believed to measure morale into a correlational matrix and then using appropriate factorial methods to identify various factors or dimensions. Item factor loadings may be considered approximations of construct validity. Although there have been a number of studies of morale in industry and in the military setting using factor analysis, such studies are practically non-existent in the teacher morale area.

It is this factor analysis feature that makes the Purdue Teacher Opinionaire somewhat unique. The Purdue Teacher Opinionaire (Morale Inventory) which was developed in 1961, consisted of 145 items selected and logically grouped to sample eight categories pertaining to the teacher and his school environment: (1) teaching as an occupation, (2) relationships with students, (3) relationships with other teachers, (4) administrative policies and procedures, (5) relationships with the community, (6) curriculum factors, (7) working conditions, and (8) economic factors. In the development of the instrument an experimental form was used and administered to five-hundred seventy teachers in twenty-two Indiana high schools. Schools were selected so that both township and city administrative units were included. Faculties ranged in size from ten to fifty-eight teachers. The final choice of items for the Teacher Opinionaire was based on internal consistency item analysis techniques. The Kuder-Richardson internal consistency reliability coefficients for the eight categories ranged from .79 to .98, with an overall reliability of .96.

Efforts were also made to determine the validity of the instrument against a criterion of peer judgments made by fellow teachers. Mean scores for "high," "middle," and "low" morale groups were statistically significant beyond the .05 level (Bentley and Rempel, 1963).

The Opinionaire was then revised on the basis of comprehensive factor analysis studies (Rempel and Bentley, 1964) made with respect to the total teacher sample and also with respect to the "high," "middle," and "low" morale groups. These studies made it possible to define the dimensions of morale more clearly and to reduce the number of items from 145 to 100. The following morale categories were identified by the factor analysis: (1) teacher rapport with principal, (2) satisfaction with teaching, (3) rapport among teachers, (4) teacher salary, (5) teacher load, (6) curriculum issues, (7) teacher status, (8) community support of education, (9) school facilities and services, and (10) community pressures.

Chapter III, the instrument development section, explains in greater detail how the reliability and validity of the instrument were established. Supporting data, such as the reliability method and coefficients, are also included along with studies that have found the Opinionaire to be a valid and reliable instrument for the purpose of measuring and assessing morale.

Related Literature and Research Pertinent to the Hypothesis of this Study

Inasmuch as several key researchers in the field, notably Blocker and Richardson (1963), have indicated that most of the research prior to 1960 was naively designed, of little value, and that most of the devices or instruments were not validated against any external criterion, only several past research studies of importance will be reviewed. Emphasis will be placed on recent research of importance to this study. In the sections on the definition, measurement, and

multidimensional aspects of morale, many of the earlier key studies were reviewed for their historical significance. This section will be concerned with recent research concerning the variables identified in the objectives.

Study after study (Bidwell, 1955; Redefer, 1959; Davis et al., 1963; Pryor, 1964; Wood, 1968) have indicated that the administrator is a key person with respect to morale. With virtually the same environmental factors operating, high or low morale can be induced depending upon the behavior pattern of the administrator of the school. Davis et al. (1963, p. 411) concluded their review of the morale research for the years 1958-63 by saying, "The immediate supervisor or administrator is extremely important to a teacher's morale. Democratic administration can offset the effects of other factors that tend to produce low morale."

The matter of salary and its effect on morale has long been studied. Two early articles cite salary as the major reason teachers leave the profession and the factor of most importance if morale is to be raised (Texas Outlook, 1955; Miller, 1959). Chandler (1959) and Mathis (1959) reported on the relation between types of salary schedules (merit versus nonmerit) and teacher morale; they concluded that the type of pay plan in a school system was not a significant variable by itself in determining the morale level of teachers. No study was found which did not emphasize salary as being an important factor in determining morale. Blocker and Richardson (1963, p. 208) however, state, "Studies which emphasize a single factor, such as salary, as being a major determinant of morale do the field a disservice."

Locke (1968, pp. 11-12), perhaps, best summarized the effect salary has on morale when he wrote:

> In our culture at least there is no limit to the amount of pay that most men would like (ideally) to have. Human wants, are, for all practical purposes unlimited. . . . However, individuals do not use infinite wealth as their sole standard in evaluating their pay. They also appraise it in terms of the perceived discrepancy between it and the minimum pay required to fulfill their present needs (or their pay relative to that of other people around them doing similar work). Their pay satisfaction results from comparing their actual pay with both their "practical ideal" (minimum adequate) and the amount that would fulfill all of their economic wants (ideal maximum).

Numerous other factors besides administration and salary influence the morale of teachers. Richardson and Blocker (1963), after a review of the literature, defined twelve areas into which most of the attitudes commonly associated with morale appeared to fit: communication; relations with immediate supervisor; confidence in administration; relations with fellow employees; relations with students; status and recognition; identification with institution; professional growth and advancement; adequacy of salary; adequacy of fringe benefits; work environment; and, work load. Kirkpatrick (1964), after a search of the literature, reported that the following factors were major elements in job satisfaction: formal relationships with administration, quality of leadership, job situation, work situation attributes, and salary. Johnson (1967), in a recent review of the literature, reported fourteen factors generally accepted as contributing to teacher satisfaction or dissatisfaction. The factors identified were: achievement, recognition, interpersonal relations, responsibility, advancement, salary, job security, personal life, status, working conditions, policy and administration, supervision, and the work itself.

One of the earliest studies which attempted to identify the factors in the teaching environment which affected morale was reported by Cralle and Burton (1938). Among the major causes of dissatisfaction were: no participation in policy decisions, too heavy work load, unfair criticism, arbitrary reassignments, salary policy, and lack of supervision.

Hedlund and Brown (1951) conducted a survey in New York State which identified several conditions as being most critical in causing teacher turnover. Among these were insufficient salary, inadequate advancement opportunities, classes too large, and unsatisfactory support in discipline.

Redefer (1959) in a comprehensive study of 24 school systems involving 5,000 teachers suggested that improvements in teacher morale could be made by concentrating on four major areas: board of education and administrative relations, personnel practices and policies, school equipment and supplies, and educational leadership of the school system.

In addition to the factors in the teaching environment which affect morale, certain personal factors affect the morale of teachers, i.e., age, education, sex, years of experience, and marital status. Certain personality factors also contribute to the morale of teachers. The National Education Association Research Bulletin (1969) reported that women are more contented in their teaching positions than are men with the exception of work load and working conditions. Single women were the least happy group in attitude toward the school, the job, and work load. Redefer (1964) however, found no relationship whatsoever between morale and marital status or sex. In fact, he found no causative

relationship between morale and training. He stated that morale was high when teachers felt personally committed to teaching, and low when the principal was more concerned with his own status than the growth of the faculty. A number of researchers, however, have found sex to be highly related to teacher morale. Brinkman (1966), who used the Purdue Teacher Opinionaire in a study of the factors related to the morale of teachers in three junior high schools, reported that female teachers had higher morale scores than did males. She found that the teachers who had taught the longest in a junior high school had the lowest mean morale scores. She also observed that the teachers with the most years of teaching experience in elementary schools prior to junior high teaching tended to have the highest mean morale scores.

Mason (1961) reported that among male first year teachers, those most satisfied with teaching were noncertified and did not have their bachelor degrees; those least satisfied were certified and were taking graduate work. On the other hand, vocational teachers with varying degrees of experience, and with no academic work beyond the bachelor degree had significantly lower morale than teachers with advanced work (Rempel and Bentley, 1963). Zinser (1967) reported that teacher morale varies with sex, experience in teaching, stubbornness, self-confidence, and sensitivity to criticism. The teachers with the highest morale are female, beginning teachers or ones with six or more years experience, and not stubborn. Gubser (1969) also reported that older teachers had higher morale than younger teachers, a finding supported by Ehresman (1969) in his study of vocational teachers in North Dakota.

The National Education Association Research Bulletin (1969, p. 6) explained the age variable in the following manner:

> Many studies suggest that between age 20 and age 65, the 45 years of marketable usefulness can be divided into three parts. From the early 20's to late 30's, a person tends to be "future oriented"; that is, he is concerned with the rewards to come, and therefore shrugs off many dissatisfactions. From the late 30's to early 50's, he tends to be oriented to the present, the unrealized aspirations become quite real, and he must reconcile his record with his aspirations. To protect his ego, he may find fault with the work environment, and thus, job satisfaction for this age group is usually lower than for those younger or older. From the early 50's to the end of his working years, a person tends to become "reality oriented"; that is, he can look at himself and his career objectively. If he views his accomplishments positively, he continues to have high job satisfaction and to produce at a high rate. On the other hand, if he is dissatisfied, he may continue plodding away at his work in anticipation of retirement.

Several studies have indicated that high teacher morale results in better instruction and better student achievement (Anderson, 1952; Koura, 1963). In addition, several studies (Hodges, 1958; Lolis, 1962) have indicated that high morale teachers have better rapport with students and their parents.

Kuhlen (1963) administered the Edwards Personal Preference Schedule, a job satisfaction rating scale, and a questionnaire related to need satisfactions of 108 male and 95 female teachers. The teachers were quite satisfied with their careers, but both sexes agreed that individuals with strong need for autonomy, succorance, abasement, and aggression would likely be frustrated. Among the male teachers particularly, high achievement needs tended to produce dissatisfaction, but the men tended to be satisfied if they perceived teaching to be potentially satisfying.

Charters (1965), in looking at the relation of morale to turnover among teachers, indicated that age and sex were strongly related to teacher mobility. By the age of 50, few males in the St. Louis area were found to be teaching. Females left teaching temporarily for family reasons, but returned to become immobile until retirement.

The only study in the literature that dealt strictly with a sizable rural population was conducted by Dennis (1954). The study was intended to include all teachers within the State of Wyoming except those teaching in towns or cities with populations of more than 2,500 people. Of the 1,338 questionnaires distributed, 62 per cent were returned. His findings indicated the following factors which comprise teacher morale or affect job satisfaction: (1) community lack of progress to provide comfortable living quarters, recreational opportunities, medical facilities, and transportation, (2) insufficient administration and supervision of schools, (3) poor physical facilities, (4) teacher salary problems, (5) inadequate teaching materials and equipment, and (6) low teacher status in the community.

Dennis supported earlier findings on the importance of administration by stating, "The fact that teachers did not understand school policies and in many cases received little or no supervision indicated administrative laxity based on lethargy or incompetency" (p. 126).

Summary

It appears evident from an examination of the literature that the attention of educational administrators is being drawn increasingly to the area of staff morale. While it is not yet convincingly demonstrated that there is any significant relationship between morale and

productivity, there is general agreement that, quite apart from any effect morale might have on teaching effectiveness, high morale is desirable.

A review of the literature indicated that only one major study (state-wide) on rural teacher morale had been conducted in the past 20 years (Dennis, 1954). The literature review indicated that few studies have concerned themselves with the relationship between teacher morale and teacher turnover. No study was found which examined the relationship between morale and salary increments received. Finally, few studies have concerned themselves with the relationship between morale and school accreditation level (supposedly a measure of educational quality). Therefore, the hypotheses under investigation would seem to be appropriate.

CHAPTER III

METHODOLOGY

Sampling Procedures

The population from which the sample was taken consisted of all high school districts in North Dakota whose 1968-69 high school enrollment (grades 9-12) was 400 or less. Teachers within those districts during the 1969-70 school year formed the teacher population for research questions one, two and four which were proffered in Chapter I. Teachers within those districts who taught in the same district as well the previous year (1968-69) formed the teacher population for objective three.

The sample was obtained from school districts selected as representative of eight regions into which the state was divided according to the map included in the 1970 North Dakota Title III, ESEA Assessment of Educational Needs (see Appendix A). Forty-six high school districts accredited 2A or lower (the smaller districts with less than 400 secondary enrollment) were randomly selected from the population.

The criteria used for determining the number of districts to be selected for each region were regional enrollment figures and the number of districts of each accreditation level within each region (see Table 1). There were 29,372 pupils enrolled in the 265 school districts having a high school enrollment less than 400 students. Twenty-six

TABLE 1

SUMMARY OF SCHOOL DISTRICTS SAMPLING PROCEDURES

Region[a]	Enrollment[b]	Per Cent of State Enrollment	Total Districts in Sample[c]	Number Districts/Regional Total/ Per Cent of Regional Total/ Number in Sample[d] 100 Pupils	100-199 Pupils	200-399 Pupils
1	2,887	9.829	4.521	11/50.0/ 2	4/18.2/ 1	7/31.8/1
2	2,123	7.228	3.325	9/50.0/ 2	9/50.0/ 1	0/ 0.0/0
3	2,628	8.947	4.116	13/59.1/ 2	5/22.7/ 1	4/18.2/1
4	4,809	16.373	7.532	27/58.7/ 4	15/32.6/ 3	4/ 8.7/1
5	3,946	13.435	6.180	23/60.5/ 4	11/29.0/ 2	4/10.5/1
6	3,659	12.457	5.730	18/60.0/ 3	7/23.3/ 1	5/16.7/1
7	3,906	13.298	6.117	25/64.1/ 4	11/28.2/ 2	3/ 7.7/1
8	5,414	18.433	8.479	29/58.0/ 5	13/26.0/ 2	8/16.0/1
	29,372	100.000	46.000	155/58.5/26	75/28.3/13	35/13.2/7

[a]See map of regions in Appendix A.

[b]Enrollment includes all secondary (9-12) students in those districts with less than 400 secondary (9-12) enrollment according to the 1968-69 State School Directory.

[c]Determined by multiplying Per Cent of State Enrollment times 46 districts in sample.

[d]The number of districts under each enrollment heading for each region was calculated by first determining the percentage of each region's total districts which fell under each enrollment heading as shown in the second columns. This per cent was multiplied times the Total Districts in Sample for the region. Where the resultant number was within ±.25, of a whole number, the whole number was used. When the deviation from a whole number was greater than ±.25, the two most closely related enrollment levels were used with one being randomly selected to include the extra district. For example, under Region 2, the first two enrollment levels each had 50 per cent of the region's districts. Each level should have 1,662 of the Total Districts in Sample for Region 2. By random selection, it was determined that the extra district should be included from those districts with less than 100 enrollment.

school districts were randomly selected from the 155 school districts having less than 100 pupils enrolled in high school; thirteen school districts were randomly selected from the 75 school districts having 100-199 pupils enrolled in high school; finally, seven school districts were selected from the 35 districts having 200-399 students enrolled in high school. Based on the number of pupils and districts of each enrollment category within each region, these figures were distributed among the regions. A table of random numbers was used to select specific districts. Appendix B lists the selected schools. With the exception of Oak Grove High School, all sampled schools met the definition of rurality as defined in Chapter I.

Instrument Used

Description

The morale measuring instrument used in this study was the Purdue Teacher Opinionaire which was copyrighted in 1967 by the Purdue Research Foundation. Ralph Bentley and Averno Rempel of Purdue University developed the instrument. It was selected over others considered (Redefer and Suehr) because of its ease of administration and its adaptability to data processing and statistical analysis. As will be described later in the chapter, the validity and reliability of the Opinionaire as a morale measuring instrument have been satisfactorily established by statistical analysis and other studies using the instrument. Finally, the multidimensional aspects of the instrument in measuring morale seemed appropriate based on the results of the literature review.

The Purdue Teacher Opinionaire was designed to provide teachers with the opportunity to express their opinions about their work and various school problems in a particular school situation. The Opinionaire contains one-hundred items. Respondents to the Opinionaire were asked to indicate whether they agreed, probably agreed, probably disagreed, or disagreed with each statement. Individual responses were scored on a 4-3-2-1 basis with the 4 weight given to the preferable response. The Opinionaire has ten factors and a total morale score. Each factor score was obtained by adding together the weights assigned to the items which comprise the factor. The total morale score was obtained by adding together the ten factor scores.

The discussion which follows will identify the factors contained in the Opinionaire and interpret their meaning.

Interpretation of the Factors

Rempel and Bentley (1964) reported that eight factors of morale were originally defined by factor analyzing the experimental form of the Purdue Teacher Opinionaire (Purdue Morale Inventory). The factor analysis procedure employed was a principal components analysis of the image-covariance matrix followed by an oblique (Carroll biquartimin) rotation of the extracted factors. Three additional factor analyses were conducted in which the same data were treated for (1) the top quarter or high morale group, (2) the middle half or middle morale group, and (3) the bottom quarter or low morale group. From these factor analyses, two additional factors were identified. Therefore, the Purdue Teacher Opinionaire has ten factors or dimensions of morale. Each factor has at least five items to define the factor.

Bentley and Rempel's (1967a, p. 4) interpretation of each of the factors is presented in the following paragraphs:

Factor 1 -"Teacher Rapport with Principal" deals with the teacher's feelings about the principal--his professional competency, his interest in teachers and their work, his ability to communicate, and his skill in human relations.

Factor 2 - "Satisfaction with Teaching" pertains to teacher relationships with students and feeling of satisfaction with teaching. According to this factor, the high morale teacher loves to teach, feels competent in his job, enjoys his students, and believes in the future of teaching as an occupation.

Factor 3 - "Rapport Among Teachers" focuses on a teacher's relationships with other teachers. The items here solicit the teacher's opinion regarding the cooperation, preparation, ethics, influence, interests, and competency of his peers.

Factor 4 - "Teacher Salary" pertains primarily to the teacher's feelings about salaries and salary policies. Are salaries based on teacher competency? Do they compare favorable with salaries in other school systems? Are salary policies administered fairly and justly, and do teachers participate in the development of these policies?

Factor 5 - "Teacher Load" deals with such matters as record-keeping, clerical work, "red tape," community demands on teacher time, extra-curricular load, and keeping up to date professionally.

Factor 6 - "Curriculum Issues" solicits teacher reactions to the adequacy of the school program in meeting student needs, in providing for individual differences, and in preparing students for effective citizenship.

Factor 7 - "Teacher Status" samples feelings about the prestige, security, and benefits afforded by teaching. Several of the items refer to the extent to which the teacher feels he is an accepted member of the community.

Factor 8 - "Community Support of Education" deals with the extent to which the community understands and is willing to support a sound educational program.

Factor 9 - "School Facilities and Services" has to do with the adequacy of facilities, supplies and equipment, and the efficiency of the procedures for obtaining materials and services.

Factor 10 - "Community Pressures" gives special attention to community expectations with respect to the teacher's personal standards, his participation in outside-school activities, and his freedom to discuss controversial issues in the classroom.

Reliability and Validity

The reliability of the Purdue Teacher Opinionaire was established by its administration to high school faculties in randomly selected districts having twenty or more teachers. Sixty Indiana and sixteen Oregon high schools were randomly selected, with 3023 teachers from these districts participating in the study.. Four weeks later the instrument was re-administered to the same group of teachers. The results of the test-retest data for the factor scores and for the total score are summarized in Table 2.

TABLE 2

TEST--RETEST CORRELATIONS AND MEANS FOR EACH PURDUE TEACHER OPINIONAIRE FACTOR AND TOTAL SCORE

	Factor (N=3023)	Correlation	Means Pre	Means Post
1.	Teacher Rapport with Principal	.88	62.26	61.26
2.	Satisfaction with Teaching	.84	69.00	68.30
3.	Rapport Among Teachers	.80	41.60	41.94
4.	Teacher Salary	.81	18.59	18.77
5.	Teacher Load	.77	34.98	34.90
6.	Curriculum Issues	.76	14.75	14.66
7.	Teacher Status	.81	23.49	23.71
8.	Community Support of Education	.78	14.62	14.66
9.	School Facilities and Services	.80	13.47	13.64
10.	Community Pressures	.62	16.37	16.22
	Total Score	.87	312.49	311.28

The validity of the instrument was established by two methods: (1) peer judgments made by fellow teachers, and (2) by principals' reactions to the Opinionaire items as they believed their faculties would react.

Validation procedure number one originated with the first form of the Opinionaire, the Purdue Teacher Morale Inventory, which was developed in 1961. The 145 items were selected on the basis of internal consistency item analysis techniques. Eight factors pertained to the teacher and his/her school environment. The 145 item instrument was validated against peer group judgments made by fellow teachers. The peer judgments were obtained from the teachers at the time they responded to the Purdue Teacher Morale Inventory. In a particular school system, teachers were asked to identify by name on the rating form, depending on the size of the faculty, from three to ten teachers whom they considered to have the highest morale, and also to select an equal number whom they considered to have the lowest morale. The teachers were asked to use the conceptual definition of morale defined in Chapter I in making their judgments.

On the basis of peer judgments, "high," "middle," and "low" teacher morale groups were identified. To determine the instrument's validity against the peer judgment criterion, mean Morale Inventory scores were calculated for each of these groups. Differences among the three groups were in the intended direction and significant at the .05 level of significance.

Procedure two involved establishing the validity of the instruments on the revised form by having the principals of the Oregon and

Indiana schools that participated in the reliability study react to the Opinionaire items as they believed their faculties would react. Differences between the median scores for teachers and the median scores for principals were not significant. Thus, the instrument was found to be a valid measure of morale. Table 3 shows the median scores by factors.

TABLE 3

MEDIAN SCORES BY FACTORS

Factors	Teachers		Principals
	Indiana	Oregon	Indiana and Oregon*
1	65	64	62
2	71	71	67
3	42	43	44
4	19	20	19
5	36	36	34
6	15	15	15
7	24	24	23
8	15	16	16
9	13	15	14
10	17	17	16

*The principals reacted to the Opinionaire items as they believed their faculty would react.

Studies by Brinkman (1966), Bentley and Rempel (1963), Collins (1965), and Provost (1964) have indicated that the Opinionaire discriminates sharply among different schools, and also among the teachers within each school. All four studies have indicated that the instrument is a valid and reliable instrument suitable for the purposes of measuring and assessing the level of teacher morale.

Method of Obtaining the Data

During the month of October the superintendent of each selected school district (see Appendix B for a listing of the cooperating schools and superintendents) was contacted by telephone and asked to participate in the study. The researcher and another graduate student made all the telephone contacts. Since this study was part of the North Dakota Title III, ESEA Assessment of Educational Needs (1970) funded by Title III ESEA and sponsored by the State Department of Public Instruction, all forty-six schools responded positively. The superintendents were asked to distribute the Opinionaire to their teachers at a faculty meeting held for that purpose. Directions for administering the Opinionaire were given over the telephone to the superintendents. A letter accompanied the Opinionaires giving further directions (see Appendix C). The superintendents were also encouraged to call the writer collect if for some reason they did not understand the directions for administering the Opinionaire. Self-addressed stamped envelopes were provided so that the teachers could personally seal and mail their Opinionaires directly to the University, thus assuring the teachers complete anonymity.

Two of the most often cited arguments against using the questionnaire method of data collection are: (1) respondents might fail to understand the directions and instructions and consequently invalidate the questionnaire; and (2) the respondents might fail to give the proper consideration and time to each item. The writer made every effort to make the directions for administering the instrument as simple and easy to understand as possible. For example, instead of

using an IBM card for marking responses, the respondents were asked to mark their responses to each item on the Opinionaire itself; thus reducing any confusion on how to mark their responses. Secondly, the instrument was administered at a faculty meeting presided over by the superintendent or his representative. Directions were carefully explained and the faculty was encouraged to take as much time as needed in filling out the instrument.

Approximately one month after the initial mailing of the Opinionaire, a follow-up telephone call was made to ten of the forty-six districts asking the superintendents to encourage their teachers to return the Opinionaire. These were the districts where the percentage of returns was considerably less than the overall return rate. Of the 809 Opinionaires sent out, 545 were returned in usable form; a 67 per cent return. Since only teachers who had previously taught in the district were included in the sample for research question three, 411 Opinionaires were retained and used for this part of the study.

Each questionnaire had an identification number on it so that the North Dakota Department of Public Instruction could be contacted for information on each teacher. The following information was obtained from the Department of Public Instruction for each teacher: age, sex, educational preparation, years of teaching experience, teaching assignment, and whether the teacher was new to the school system. Each school district's teacher turnover rate, faculty size, and accreditation rating was obtained from State Department records.

Responses from each Opinionaire together with the identification number were placed on an IBM scanner sheet. The data were then

punched on IBM cards for scoring purposes. Ten factor scores and a total morale score were obtained for each teacher by the IBM 360/30 computer. The personal data for each teacher, the factor scores, and the total morale score were then transferred to IBM cards for use in the statistical analysis of the data using the statistical sub-routine package available through the university computer center.

Techniques Used in Data Analysis

The statistical procedures employed in this study for objective one was stepwise backward multiple linear regression. The stepwise regression technique was used to isolate the best biographical predictors of morale. Significance for the best predictors was reported using the .05 level. The significant predictors of morale as measured by the Purdue Teacher Opinionaire total score were used as control variables for objectives two, three, and four. These objectives were first analyzed by analysis of variance techniques using the multiple linear regression method to determine the F-ratio. When the F-ratio was significant beyond the .05 level, analysis of covariance using the regression procedure was employed, controlling for the variables identified under objective one, to determine whether the null hypothesis should be rejected. When the null hypothesis was rejected, Scheffé's test was used to determine which pairs of group means were significant beyond the .05 level.

Multiple linear regression techniques were used to find the F-ratio for analysis of variance and covariance because they lend themselves better to data processing than does the standard analysis of variance procedure. Schmid (1967, p. 1) best described the

appropriateness of regression techniques when he stated: "Regression formulation eliminates the need for equal or proportional cell frequencies in factorial analysis of variance and covariance."

CHAPTER IV

ANALYSIS OF THE DATA

The data are presented in this chapter under four general sections according to the order of the research questions presented in Chapter I.

The first section is a report of the results when nine biographical variables were isolated to determine which contributed most to the prediction of the various factors of morale and the total morale score as obtained from the Purdue Teacher Opinionaire (PTO). The best predictors of morale on the PTO total score were then used as control variables for the remaining three research questions presented in the last three sections of this chapter. Stepwise backward multiple linear regression procedures were employed to isolate the best predictors of morale.

The second section is a report of the analyses of the effect salary has on morale. The third section reports the effect that the size of salary increase has upon morale. The last section is a report of the effect each of the nine biographical variables presented in section one has upon morale.

Each of the last three sections' hypotheses was tested by one-way analysis of variance techniques using multiple linear regression to determine the F-ratio. In addition, each hypothesis has been analyzed by analysis of covariance using the multiple linear regression

approach to find the F-ratio. Where significance was found using both one-way analysis of variance and covariance for the regression, Scheffé's test was employed to determine which pairs of group mean differences were significant.

The population for sections one, two, and four included all teachers who were teaching in the selected North Dakota high school districts with 400 or less enrollment during the 1969-70 school year. The population for section three consisted of only those teachers who taught in the selected school district during the 1968-69 school year and returned to teach in the same district during the 1969-70 school year.

Stepwise Backward Multiple Linear Regression on Nine Biographical Variables With the PTO Factors and Total Score as the Criteria

The predictor (biographical) variables used in this study were as follows: (1) age, (2) sex, (3) educational preparation--whether less than B.A., B.A., or M.A. Degree, (4) number of years teaching experience, (5) teaching assignment--whether elementary (K-8) or secondary (9-12), (6) whether new or returning to the school district, (7) accreditation level or rating of the school in which the teacher taught, (8) rate of school district teacher turnover determined by faculty loss between 1968-69 and 1969-70, and (9) the number of teachers in the school system (faculty size).

Figure 1 indicates the abbreviations used in presenting the results of the stepwise backward analyses. The abbreviations presented in Figure 1 are used in Tables 4 through 15.

Abbreviation	Variable Name
Age	Age
Sex	Sex
Educ	Educational Preparation
Exp	Years Teaching Experience
Asgn	Teaching Assignment
Norr	New or Returning
Level	School Accreditation Level
Turn	School District Faculty Turnover
Size	Faculty Size

Fig. 1.--Abbreviations Used in Presenting the Results of the Regression.

The stepwise backward procedure was used with the biographical variables as the predictors of morale. This procedure allowed the investigator to eliminate those predictors which were considered to be of least importance in the prediction of morale as determined by the ten PTO factors and total score. In accordance with the computer program utilized, the variable which contributed least to explaining the variable was dropped first. The new set of variables was entered again and the same procedure was repeated. This process continued until only one variable was left--the best predictor. The significance level was established a priori at the .05 level for each predictor.

The stepwise backward procedure was used with the data and is shown in Table 4 with the factor 1 variable of rapport with principal, as the criterion.

TABLE 4

STEPWISE BACKWARD PROCEDURE WITH THE PTO FACTOR 1 VARIABLE OF RAPPORT WITH PRINCIPAL AS THE CRITERION (N=545)

Step	Variables Entered									R
Full Model	Age	Sex	Educ	Exp	Asgn	Norr	Level	Turn	Size	.131
1	Age	Sex	Educ	Exp	Asgn	Norr	Level	--	Size	.130
2	Age	Sex	Educ	Exp	Asgn	Norr	Level	--	--	.130
3	Age	--	Educ	Exp	Asgn	Norr	Level	--	--	.129
4	Age	--	Educ	Exp	Asgn	Norr	--	--	--	.129
5	Age	--	Educ	Exp	Asgn	--	--	--	--	.121
6	Age	--	Educ	Exp	--	--	--	--	--	.110
7	--	--	Educ	Exp	--	--	--	--	--	.085
8	--	--	--	Exp	--	--	--	--	--	.054*

*Significant beyond the .05 level. Significance was determined by testing each successive pair of steps with the following formula:

$$F = \frac{(R^2_{FM} - R^2_{RM})/dfn}{(1 - R^2_{FM})/dfd}$$

The square of the multiple correlation for the full model (R^2_{FM}) was obtained from the step with n + 1 variables and the square of the multiple correlation for the restricted model (R^2_{RM}) was obtained from the step with n variables. The degrees of freedom for the numerator (dfn) was computed by subtracting the number of linearly independent vectors (variables) in the restricted model from the number of linearly independent vectors in the full model. The degrees of freedom for the denominator (dfd) was computed by subtracting the number of linearly independent vectors in the full model from the total number of subjects (N). A significant difference indicates that the variable's absence from the model in the step from which R_{RM} was obtained has significant predictability on the PTO factor used as the criterion. When significant F values were obtained as each control variable was entered, tests as to whether the partial regression coefficients were individually different from zero indicated that all were significant or nearly so (.05 level).

Years of teaching experience emerged as the best predictor of factor 1 with R=.054. It was significant beyond the .01 level. The other eight variables appeared to have little relevance to the prediction of morale when factor 1 of the PTO was used as the criterion.

Table 5 presents the results of the stepwise regression when the factor 2 variable of satisfaction with teaching was used as the criterion.

TABLE 5

STEPWISE BACKWARD PROCEDURE WITH THE PTO FACTOR 2 VARIABLE OF SATISFACTION WITH TEACHING AS THE CRITERION (N=545)

Step	Variables Entered									R
Full Model	Age	Sex	Educ	Exp	Asgn	Norr	Level	Turn	Size	.264
1	Age	Sex	Educ	Exp	Asgn	Norr	Level	Turn	--	.264
2	Age	Sex	Educ	Exp	Asgn	Norr	Level	--	--	.263
3	Age	Sex	Educ	Exp	Asgn	Norr	--	--	--	.262
4	Age	Sex	Educ	Exp	Asgn	--	--	--	--	.260
5	Age	--	Educ	Exp	Asgn	--	--	--	--	.251
6	Age	--	--	Exp	Asgn	--	--	--	--	.233*
7	--	--	--	Exp	Asgn	--	--	--	--	.212*
8	--	--	--	--	Asgn	--	--	--	--	.142*

*See footnote in Table 4.

Teaching assignment emerged as the best predictor of factor 2 with R=.142. Years of teaching experience and age also contributed to

the regression. All three were significant beyond the .05 level. The other six variables appeared to have little predictive relevance when factor 2 of the PTO was used as the criterion.

Table 6 reports the results of the stepwise regression when the factor 3 variable of rapport among teachers was used as the criterion.

TABLE 6

STEPWISE BACKWARD PROCEDURE WITH THE PTO FACTOR 3 VARIABLE OF RAPPORT AMONG TEACHERS AS THE CRITERION (N=545)

Step	Variables Entered									R
Full Model	Age	Sex	Educ	Exp	Asgn	Norr	Level	Turn	Size	.125
1	Age	Sex	Educ	Exp	Asgn	Norr	Level	--	Size	.124
2	Age	--	Educ	Exp	Asgn	Norr	Level	--	Size	.122
3	Age	--	Educ	Exp	--	Norr	Level	--	Size	.121
4	Age	--	Educ	Exp	--	Norr	--	--	Size	.119
5	Age	--	Educ	Exp	--	--	--	--	Size	.114
6	Age	--	Educ	--	--	--	--	--	Size	.099
7	--	--	Educ	--	--	--	--	--	Size	.092
8	--	--	--	--	--	--	--	--	Size	.050

Table 6 reveals that the best predictor was faculty size with educational preparation and age also contributing to the regression. However, none of the predictors were significant measures of the factor 3 variable of rapport among teachers.

Table 7 reports the results of the stepwise regression when the factor 4 variable of teacher salary was used as the criterion.

TABLE 7

STEPWISE BACKWARD PROCEDURE WITH THE PTO FACTOR 4 VARIABLE OF TEACHER SALARY AS THE CRITERION (N=545)

Step	Variables Entered									R
Full Model	Age	Sex	Educ	Exp	Asgn	Norr	Level	Turn	Size	.267
1	Age	--	Educ	Exp	Asgn	Norr	Level	Turn	Size	.267
2	--	--	Educ	Exp	Asgn	Norr	Level	Turn	Size	.266
3	--	--	--	Exp	Asgn	Norr	Level	Turn	Size	.266
4	--	--	--	Exp	Asgn	Norr	--	Turn	Size	.264
5	--	--	--	--	Asgn	Norr	--	Turn	Size	.249
6	--	--	--	--	Asgn	--	--	Turn	Size	.239
7	--	--	--	--	--	--	--	Turn	Size	.209*
8	--	--	--	--	--	--	--	Turn	--	.189*

*See footnote in Table 4.

Per cent of teacher turnover in the schools emerged as the best predictor with R=.189. Faculty size also contributed to the prediction. Both variables were significant beyond the .05 level. The other seven variables appeared to have little prediction relevance when factor 4 of the PTO was used as the criterion.

Table 8 reports the results of the stepwise regression when the factor 5 variable of teacher load was used as the criterion.

TABLE 8

STEPWISE BACKWARD PROCEDURE WITH THE PTO FACTOR 5 VARIABLE OF TEACHER LOAD AS THE CRITERION (N=545)

Step	Variables Entered									R
Full Model	Age	Sex	Educ	Exp	Asgn	Norr	Level	Turn	Size	.193
1	Age	Sex	Educ	Exp	Asgn	Norr	--	Turn	Size	.192
2	Age	--	Educ	Exp	Asgn	Norr	--	Turn	Size	.191
3	Age	--	Educ	Exp	Asgn	Norr	--	Turn	--	.189
4	Age	--	Educ	Exp	Asgn	--	--	Turn	--	.184
5	Age	--	Educ	Exp	Asgn	--	--	--	--	.176
6	Age	--	--	Exp	Asgn	--	--	--	--	.159*
7	Age	--	--	--	Asgn	--	--	--	--	.131*
8	--	--	--	--	Asgn	--	--	--	--	.074*

*See footnote in Table 4.

Table 8 reveals that there are three variables with significant predictability beyond the .05 level. Teaching assignment was the best predictor with age and years experience both significant predictors of morale as measured by factor 5. The remaining six various apparently had little predictive relevance when factor 5 of the PTO was used as the criterion.

Table 9 reports the result of the stepwise regression when the factor 6 variable of curriculum issues was used as the criterion.

TABLE 9

STEPWISE BACKWARD PROCEDURE WITH THE PTO[a] FACTOR 6 VARIABLE OF CURRICULUM ISSUES AS THE CRITERION (N=545)

Step	Variables Entered									R
Full Model	Age	Sex	Educ	Exp	Asgn	Norr	Level	Turn	Size	.228
1	Age	Sex	Educ	Exp	Asgn	Norr	--	Turn	Size	.228
2	Age	--	Educ	Exp	Asgn	Norr	--	Turn	Size	.227
3	Age	--	Educ	Exp	Asgn	--	--	Turn	Size	.226
4	Age	--	Educ	Exp	--	--	--	Turn	Size	.221*
5	Age	--	Educ	Exp	--	--	--	Turn	--	.201*
6	Age	--	Educ	Exp	--	--	--	--	--	.176*
7	Age	--	Educ	--	--	--	--	--	--	.085
8	--	--	Educ	--	--	--	--	--	--	.043

*See footnote in Table 4.

Table 9 reveals that the best predictor was educational preparation. Educational preparation was not significant at the .05 level, however, it was significant at the .10 level. Age, years of teaching experience, per cent of teacher turnover, and faculty size entered the regression in that order of importance. With the exception of age, the variables were significant beyond the .05 level. The remaining variables apparently had no predictability when factor 6 of the PTO was used as the criterion.

Table 10 reports the results of the stepwise regression when the factor 7 variable of teacher status was used as the criterion.

TABLE 10

STEPWISE BACKWARD PROCEDURE WITH THE PTO FACTOR 7 VARIABLE OF TEACHER STATUS AS THE CRITERION (N=545)

Step	Variables Entered									R
Full Model	Age	Sex	Educ	Exp	Asgn	Norr	Level	Turn	Size	.257
1	Age	Sex	Educ	Exp	Asgn	--	Level	Turn	Size	.256
2	Age	Sex	Educ	Exp	Asgn	--	Level	Turn	--	.254
3	Age	Sex	Educ	Exp	--	--	Level	Turn	--	.252
4	Age	Sex	Educ	--	--	--	Level	Turn	--	.248
5	--	Sex	Educ	--	--	--	Level	Turn	--	.246
6	--	Sex	Educ	--	--	--	--	Turn	--	.240*
7	--	Sex	Educ	--	--	--	--	--	--	.222*
8	--	--	Educ	--	--	--	--	--	--	.093

*See footnote in Table 4.

Educational preparation emerged as the best predictor with R=.093. Both sex and teacher turnover contributed to the regression and were significant beyond the .05 level. The other six variables appeared to have little predictability when factor 7 was used as the criterion.

Table 11 reports the results of the stepwise regression when the PTO factor variable of community support was used as the criterion.

TABLE 11

STEPWISE BACKWARD PROCEDURE WITH THE PTO FACTOR 8 VARIABLE OF COMMUNITY SUPPORT AS THE CRITERION (N=545)

Step	Variables Entered									R
Full Model	Age	Sex	Educ	Exp	Asgn	Norr	Level	Turn	Size	.218
1	Age	Sex	Educ	Exp	Asgn	--	Level	Turn	Size	.216
2	Age	Sex	Educ	Exp	Asgn	--	--	Turn	Size	.213
3	Age	Sex	--	Exp	Asgn	--	--	Turn	Size	.211
4	--	Sex	--	Exp	Asgn	--	--	Turn	Size	.208
5	--	Sex	--	Exp	Asgn	--	--	--	Size	.204
6	--	Sex	--	Exp	Asgn	--	--	--	--	.194
7	--	Sex	--	--	Asgn	--	--	--	--	.177*
8	--	Sex	--	--	--	--	--	--	--	.104*

*See footnote in Table 4.

The teacher's sex emerged as the best predictor with R=.104 and was significant beyond the .05 level. Teacher assignment was the second best predictor and was significant beyond the .05 level. The remaining seven variables, however, appeared to have little predictability when factor 8 was used as the criterion.

Table 12 reports the results of the stepwise regression when the PTO factor 9 variable of school facilities and services was used as the criterion.

TABLE 12

STEPWISE BACKWARD PROCEDURE WITH THE PTO FACTOR 9 VARIABLE OF SCHOOL FACILITIES AS THE CRITERION (N=545)

Step	Variables Entered									R
Full Model	Age	Sex	Educ	Exp	Asgn	Norr	Level	Turn	Size	.158
1	Age	Sex	Educ	Exp	Asgn	Norr	Level	Turn	--	.158
2	Age	Sex	Educ	Exp	Asgn	Norr	--	Turn	--	.157
3	Age	--	Educ	Exp	Asgn	Norr	--	Turn	--	.156
4	Age	--	Educ	Exp	Asgn	--	--	Turn	--	.152
5	Age	--	Educ	Exp	--	--	--	Turn	--	.146
6	Age	--	--	Exp	--	--	--	Turn	--	.136
7	--	--	--	Exp	--	--	--	Turn	--	.134*
8	--	--	--	Exp	--	--	--	--	--	.114

*See footnote in Table 4.

Years of teaching experience emerged as a significant predictor of factor 9. It had an R=.114 and was significant at the .10 level. Teacher turnover contributed to the prediction beyond the .05 level. None of the other seven variables had predictability when factor 9 was used as the criterion.

Table 13 reports the results of the stepwise regression when the factor 10 variable of community services was used as the criterion.

TABLE 13

STEPWISE BACKWARD PROCEDURE WITH THE PTO FACTOR 10 VARIABLE OF COMMUNITY SERVICES AS THE CRITERION (N=545)

Step	Variables Entered									R
Full Model	Age	Sex	Educ	Exp	Asgn	Norr	Level	Turn	Size	.171
1	Age	Sex	Educ	Exp	Asgn	--	Level	Turn	Size	.171
2	Age	--	Educ	Exp	Asgn	--	Level	Turn	Size	.170
3	Age	--	Educ	Exp	Asgn	--	Level	Turn	--	.169
4	Age	--	Educ	Exp	Asgn	--	--	Turn	--	.165
5	Age	--	--	Exp	Asgn	--	--	Turn	--	.150
6	Age	--	--	--	Asgn	--	--	Turn	--	.137
7	--	--	--	--	Asgn	--	--	Turn	--	.117
8	--	--	--	--	--	--	--	Turn	--	.093*

*See footnote in Table 4.

Per cent of teacher turnover emerged as the best predictor and was significant beyond the .05 level. None of the remaining eight variables were significant beyond the .05 level. However, if the .10 level of significance was used, teaching assignment would have been significant. None of the other variables apparently have predictability when factor 10 was employed as the criterion.

Table 14 reports the results of the stepwise regression when the PTO total morale score variable was used as the criterion.

TABLE 14

STEPWISE BACKWARD PROCEDURE WITH THE PTO TOTAL SCORE VARIABLE AS THE CRITERION (N=545)

Step	Variables Entered									R
Full Model	Age	Sex	Educ	Exp	Asgn	Norr	Level	Turn	Size	.231
1	Age	Sex	Educ	Exp	Asgn	Norr	--	Turn	Size	.231
2	Age	--	Educ	Exp	Asgn	Norr	--	Turn	Size	.230
3	Age	--	Educ	Exp	Asgn	--	--	Turn	Size	.230
4	Age	--	Educ	Exp	Asgn	--	--	Turn	--	.227
5	Age	--	Educ	Exp	Asgn	--	--	--	--	.223
6	Age	--	Educ	Exp	--	--	--	--	--	.204*
7	--	--	Educ	Exp	--	--	--	--	--	.175*
8	--	--	Educ	--	--	--	--	--	--	.137*

*See footnote in Table 4.

Analyses of Table 14 revealed that the best predictor of morale was the educational preparation of the teacher. It had a multiple correlation of .137. Years of teaching experience was the second best predictor and age the third. All three variables had significant predictability beyond the .05 level. The remaining variables which entered the regression did not prove to be significant beyond the .05 level when the total morale score was used as the dependent variable or criterion.

Table 15 presents a summary of the nine variables used to predict morale as measured by the ten PTO factor scores and total morale score.

TABLE 15

SUMMARY OF STEPWISE BACKWARD PROCEDURE WHEN THE PTO TOTAL SCORE AND FACTOR SCORES ARE USED AS THE CRITERION AND THE NINE BIOGRAPHICAL VARIABLES AS THE PREDICTORS

Factor	Age	Sex	Educ	Exp	Asgn	Norr	Level	Turn	Size
1	--	--	--	Exp*	--	--	--	--	--
2	Age*	--	--	Exp*	Asgn*	--	--	--	--
3	--	--	--	--	--	--	--	--	--
4	--	--	--	--	--	--	--	Turn*	Size*
5	Age*	--	--	Exp*	Asgn*	--	--	--	--
6	--	--	--	Exp*	--	--	--	Turn*	Size*
7	--	Sex*	--	--	--	--	--	Turn*	--
8	--	Sex*	--	--	Asgn*	--	--	--	--
9	--	--	--	--	--	--	--	Turn*	--
10	--	--	--	--	--	--	--	Turn*	--
Total Score	Age*	--	Educ*	Exp*	--	--	--	--	--

--No significance.
*Significant beyond the .05 level.

Table 15 reveals that two variables, experience and teacher turnover, were found to have significant predictability on five factors of morale. Age and teaching assignment were found to have significant predictability on three factors of morale. Sex was found to significantly predictor factors 7 and 8. The size of the school as measured by the number of faculty members significantly

predicted factors 4 and 6. Educational preparation was found to significantly predict only one score, the total morale score. It was the best predictor of two other factors, however, namely factors 6 and 7. Apparently the accreditation level variable and whether a teacher was new to the system or returning had little relevance to the prediction of morale regardless of the PTO factors used to measure it.

Whenever analysis of covariance for the regression was used to analyze the data in the remaining sections of this chapter, the variables of age, educational preparation, and years teaching experience were used as the control variables. These were the variables that were found to have significant predictability when the PTO total morale score was used as the dependent variable or criterion.

The Effects of Salary on Morale

Null Hypothesis Number One

There were no significant differences in morale among teachers of different salary levels when the PTO factor scores and the total score were used as the criteria.

For the purposes of this section, a teacher may have had membership in five possible salary groups: (1) those who earned less than $5,000 a year, (2) those who earned $5,000 to $5,999 a year, (3) those who earned $6,000 to $6,999 a year, (4) those who earned $7,000 to $7,999 a year, and (5) those who earned $8,000 or more yearly.

Table 16 presents a comparison of teacher means for teacher PTO factors and total score by salary groups. For the total score and most of the factor scores, teachers who had the smallest salary tended to have the highest morale scores. The F-ratios for the one-way analysis

of variance reported in Table 16 indicated that there was a significant difference in morale among teachers who were grouped according to salary levels when factors 1, 2, 8 and total score were used as the criteria.

TABLE 16

COMPARISON OF MEANS FOR TEACHER PTO FACTORS AND TOTAL SCORE BY SALARY LEVELS (N=545)

Factor	1 Less Than $5000 N=93	2 $5000 to $5999 N=115	3 $6000 to $6999 N=195	4 $7000 to $7999 N=91	5 $8000 or More N=51	Anova* R_{FM}	Anova* F-Ratio	Covar** R_{FM}	Covar** R_{RM}	Covar** F-Ratio
1	61.26	58.31	55.88	55.44	56.71	.139	2.65***	.153	.110	1.60
2	67.64	63.07	61.79	59.73	61.45	.190	5.05***	.255	.217	2.57***
3	44.41	41.12	42.19	42.65	42.79	.109	1.64			
4	16.18	17.15	16.81	17.00	17.61	.086	1.00			
5	32.33	29.95	30.21	29.05	30.28	.100	1.34			
6	13.42	13.28	12.96	12.69	12.87	.060	.48			
7	22.21	21.55	20.80	20.75	20.66	.086	1.01			
8	15.89	14.90	14.38	14.38	14.59	.154	3.28***	.198	.162	1.82
9	12.75	12.30	11.95	12.29	12.17	.074	.74			
10	16.07	15.76	15.38	15.12	15.87	.107	1.57			
TS	317.27	285.95	282.32	277.71	284.31	.133	2.42***	.221	.204	1.02

*R_{FM} refers to the multiple correlation obtained from the full model.
**Education Preparation, Years Teaching Experience, and Age Controlled.

R_{RM} refers to the multiple correlation obtained from the restricted model.
***Significant beyond the .05 level.

When education preparation, years of teaching experience, and age were controlled for factors 1, 2, 8 and total score, analysis of covariance for the regression indicated that the difference in means

was significant for factor 2 only. Therefore, the null hypothesis was rejected when the factor 2 variable of satisfaction with teaching was used as the criterion. The null hypothesis was retained when the remaining factors were used as the criteria.

The Scheffé test was utilized to determine which of the mean differences were significant for factor 2 of the PTO. Table 17 reports the results of the test. It was found that the significant F-ratio obtained in Table 16 for factor 2 was due to the significant difference obtained between groups 1 (less than $5,000) and 4 ($7,000 to $7,999). Group 1 had a significantly larger morale score than group 4.

TABLE 17

COMPARISON OF MEANS OF FACTOR 2 OF THE PTO AMONG TEACHERS HAVING DIFFERENT SALARY GROUP MEMBERSHIP

Group Comparisons	Means	Mean Difference	Scheffé F*
1 vs 4	67.64 - 59.73	7.91	17.24**
1 vs 5	67.64 - 61.45	6.19	7.48
1 vs 3	67.64 - 61.79	5.85	7.98
1 vs 2	67.64 - 63.07	4.57	6.33
2 vs 4	63.07 - 59.73	3.34	3.38
3 vs 4	61.79 - 59.73	2.06	1.61
2 vs 3	63.07 - 61.79	1.28	.71
4 vs 5	59.73 - 61.45	1.72	.58
2 vs 5	63.07 - 61.45	1.62	.55

*Mean square within term required for calculation of Scheffé's test was 165.17.
**Significant beyond the .05 level.

The Effects of Salary Increases on Morale

Null Hypothesis Two

There were no significant differences in morale among teachers of different levels of salary increases when the PTO factor score and total score were used as the criteria.

Salary increases were determined by ascertaining the per cent of increase in salary received by teachers between the 1968-69 and 1969-70 school year. Increases were recorded in percentages. A teacher may have had membership in four possible groups depending upon the per cent of salary increase received: (1) those who received less than a 4.00 per cent salary increase, (2) those who received a 4.00 to 6.99 per cent salary increase, (3) those who received a 7.00 to 9.99 per cent salary increase, and (4) those who received a 10 per cent or greater increase in salary.

Table 18 presents a comparison of means for teacher PTO factors and total score by per cent of salary increase. For total score and most of the factor scores, larger salary increases tend to result in slightly larger mean scores than the group having lower salary increases. The F-ratios for the one-way analysis of variance reported in Table 18 indicated that there were significant differences in morale among the four groups when factors 4 and 8 were used as the criteria.

When educational preparation, years of teaching experience and age were controlled for factors 4 and 8, analysis of covariance for the regression indicated that the difference in means was significant on factor 4 but not on factor 8. Therefore the null hypothesis was

rejected when factor 4 was used as the criterion. The null hypothesis was retained when the remaining factors and total score were used as the criteria.

TABLE 18

COMPARISON OF MEANS FOR TEACHER PTO FACTORS AND TOTAL SCORE BY PER CENT OF SALARY INCREASE GROUP MEMBERSHIP (N=411)

Factor	1 Less Than 4% N=134	2 4-6.99 N=114	3 7-9.99 N=85	4 10+ N=78	Anova* R_{FM}	Anova* F-Ratio	Covar** R_{FM}	Covar** R_{RM}	Covar** F-Ratio
1	57.29	56.67	58.22	56.08	.051	.36			
2	63.71	64.04	61.29	63.03	.088	1.06			
3	41.82	42.54	41.63	42.53	.039	.21			
4	15.36	17.54	17.36	18.07	.187	34.73***	.228	.114	4.15***
5	30.18	31.8.	29.75	30.98	.090	1.10			
6	12.88	13.42	13.55	13.22	.068	.63			
7	21.27	21.37	21.28	21.32	.008	.01			
8	15.34	14.13	13.90	14.42	.144	2.88***	.235	.187	2.17
9	12.49	12.04	12.65	11.74	.093	1.18			
10	15.80	15.43	15.88	15.14	.105	1.50			
TS	285.11	288.76	286.52	286.34	.031	.13			

*R_{FM} refers to the multiple correlation obtained from the full model.
**Educational Preparation, Years Teaching Experience, and Age Controlled.
R_{RM} refers to the multiple obtained from the restricted model.
***Significant beyond the .05 level.

The Scheffé test was used to determine which of the mean differences were significant on factor 4 of the PTO. Table 19 reports the

results of the test. It was found that the significant F-ratio reported in Table 18 for factor 4 was due to the mean differences between groups 1 (4 per cent or less), and 4 (10 per cent or more) and between groups 1 and 2 (4 to 6.99 per cent). The two group comparisons were significant beyond the .05 level of significance with group 1 having the lower morale score in each comparison.

TABLE 19

COMPARISON OF MEANS ON FACTOR 4 OF THE PTO AMONG TEACHERS HAVING DIFFERENT PER CENT OF SALARY INCREASE GROUP MEMBERSHIP

Group Membership	Means	Mean Difference	Scheffé F*
1 vs 4	15.36 - 18.07	2.71	10.56**
1 vs 2	15.36 - 17.54	2.18	8.54**
1 vs 3	15.36 - 17.36	2.00	6.06
3 vs 4	17.36 - 18.07	.71	.58

*Mean square within term required for calculation of Scheffé's test was 34.73
**Significant beyond the .05 level.

The Effects of Selected Biographical Variables on Morale

Null Hypothesis Number Three

There were no significant differences in morale among teachers grouped according to their membership class for the selected biographical variables when the PTO factor scores and total score were used as the criteria.

The nine biographical variables which were entered into the stepwise backward regression procedures in section one are presented as separate hypotheses for analysis in this section.

Null Hypothesis (3-A). There were no significant differences in morale among teachers of different age groups when the PTO factor scores and total score were used as the criteria.

The following four age groups formed the research population: (1) 21-25, (2) 26-35, (3) 36-50, and (4) 51 and over.

Table 20 presents a comparison of teacher means for teacher PTO factors and total score by age levels. For total score and most of the factor scores, younger teachers (under 36) had lower morale scores. F-ratios for the one-way analysis of variance reported in Table 20 indicated that there was a significant difference in means among the four age groups when factors 2 and 8 were used as the criteria.

When educational preparation and years teaching experience were controlled for factors 2 and 8, analysis of covariance for the regression indicated that the difference in means was not significant. The null hypothesis was therefore retained.

Null Hypothesis (3-B). There were no significant differences in morale between male and female teachers when the PTO factor scores and total score were used as the criteria.

TABLE 20

COMPARISON OF MEANS FOR TEACHER PTO FACTORS AND TOTAL SCORE BY AGE LEVELS (N=545)

Factor	1 21-25 N=150	2 26-35 N=165	3 36-50 N=103	4 51+ N=127	Anova* R_{FM}	Anova* F-Ratio	Covar** R_{FM}	Covar** R_{RM}	Covar** F-Ratio
1	57.69	55.11	58.76	58.59	.100	1.83			
2	61.41	60.66	65.23	64.73	.151	4.22***	.196	.175	1.46
3	42.12	41.61	43.87	41.90	.077	1.08			
4	16.18	16.15	16.28	17.00	.114	2.35			
5	29.93	29.66	32.23	30.17	.093	1.56			
6	12.89	13.01	13.40	13.02	.042	.32			
7	20.67	20.66	22.40	21.45	.102	1.91			
8	14.15	14.70	15.03	15.34	.123	2.77***	.150	.146	.22
9	11.99	11.96	12.36	12.81	.088	1.41			
10	15.29	15.57	15.86	15.46	.064	.74			
TS	282.25	279.39	297.28	289.40	.112	2.28			

*R_{FM} refers to the multiple correlation obtained from the full model.
**Educational Preparation and Years Teaching Experience Controlled. R_{RM} refers to the multiple correlation obtained from the restricted model.
***Significant beyond the .05 level.

Table 21 presents a comparison of teacher means for teacher PTO factors and total score by sex. For total score and all of the factor scores, female teachers had higher morale than male teachers. The F-ratios for the one-way analysis of variance reported in Table 21 indicated that there was a significant difference in morale between

male and female teachers when factors 2, 7, 8, 10, and total score were used as the criteria.

TABLE 21

COMPARISON OF MEANS FOR TEACHER PTO FACTORS AND TOTAL SCORE BY SEX (N=545)

Factor	1 male N=206	2 female N=339	Anova* R_{FM}	Anova* F-Ratio	Covar** R_{FM}	Covar** R_{RM}	Covar** F-Ratio
1	56.67	57.70	.033	.59			
2	59.84	64.40	.170	16.11***	.240	.217	6.04***
3	42.17	42.29	.006	.02			
4	16.56	17.07	.042	.95			
5	29.62	30.77	.056	1.69			
6	12.68	13.29	.071	2.73			
7	19.53	22.19	.196	21.61***	.231	.171	13.7 ***
8	14.12	15.15	.139	10.70***	.184	.162	4.25***
9	12.25	12.23	.002	.00			
10	15.19	15.73	.086	4.07***	.132	.120	1.67
TS	278.58	290.34	.096	5.09***	.208	.200	1.84

*R_{FM} refers to the multiple correlation obtained from the full model.
**Educational Preparation, Years Teaching Experience, and Age Controlled. R_{RM} refers to the multiple correlation obtained from the restricted model.
***Significant beyond the .05 level.

When educational preparation, years teaching experience, and age were controlled for factors 2, 7, 8, 10 and total score, analysis of covariance for the regression indicated that the difference in means

was significant on factors 2, 3, and 8. Therefore the null hypothesis was rejected when those factors were used as the criteria. The null hypothesis was retained when the remaining factors were used as the criteria. The Scheffé test was not used to determine the differences in scores because only two groups were used in the analysis. When significance was found it was due to the group having the higher score, namely female teachers.

Null Hypothesis (3-C). There were no significant differences in morale among teachers of different levels of educational preparation when the PTO factor score and total scores were used as the criteria.

The following three educational preparation teacher groups formed the research population: (1) less than a B.A., (2), B.A., and (3) M.A. Degree teachers.

Table 22 presents a comparison of teacher means for teacher PTO factors and total score by educational preparation levels. For the total score and all of the factor scores, teachers with the least amount of education (less than a B.A. Degree) had the highest score. The F-ratios for the one-way analysis of variance reported in Table 22 indicated that there were significance differences in morale among the three educational preparation groups when factors 1, 2, 5, 6, 7, 8, and total score were used as the criteria.

When educational preparation, years teaching experience, and age were controlled for factors 1, 2, 5-8 and total score, analysis of covariance for the regression indicated that the difference in means was significant for all comparisons. Therefore the null hypothesis was rejected when those scores were used as the criteria. The null hypothesis was retained when the remaining factors were used as the criteria.

TABLE 22

COMPARISON OF MEANS FOR TEACHER PTO FACTORS AND TOTAL SCORE BY EDUCATIONAL PREPARATION (N=545)

Factor	1 <B.A. N=151	2 B.A. N=364	3 M.A. N=30	Anova* R_{FM}	Anova* F-Ratio	Covar** R_{FM}	Covar** R_{RM}	Covar** F-Ratio
1	60.72	55.64	55.83	.140	5.43***	.141	.068	4.20***
2	67.52	60.91	59.80	.231	15.24***	.240	.143	10.64***
3	43.61	41.68	42.37	.081	1.81			
4	17.51	16.51	18.10	.089	2.18			
5	32.30	29.72	27.90	.128	4.52***	.130	.060	3.65***
6	13.96	12.76	12.17	.136	5.08***	.136	.051	4.37***
7	22.68	20.71	19.30	.149	6.15***	.163	.100	4.60***
8	15.66	14.47	13.80	.160	7.13***	.186	.140	4.20***
9	12.79	12.02	12.03	.087	2.06			
10	16.00	15.37	15.07	.097	2.60			
TS	301.64	280.15	276.37	.165	7.61***	.197	.136	5.70***

*R_{FM} refers to the multiple correlation obtained from the full model.
**Years Teaching Experience and Age Controlled. R_{RM} refers to the multiple correlation obtained from the restricted model.
***Significant beyond the .05 level.

The Scheffé test was used to determine which of the mean differences were significant for factors 1, 2, 5-8 and the total score of the PTO. Tables 23 through 30 present the results. Table 23 reports the results when the Scheffé test was used to determine which mean differences were significant on factor 1 of the PTO. It was found that

the mean difference obtained between groups 1 and 2 was significant beyond the .05 level.

TABLE 23

COMPARISON OF MEANS ON FACTOR 1 OF THE PTO AMONG TEACHERS HAVING DIFFERENT EDUCATIONAL PREPARATION GROUP MEMBERSHIP

Group Comparisons	Means	Mean Difference	Scheffé F*
1 vs 2	60.72 - 55.64	5.11	11.71**
1 vs 3	60.72 - 55.83	4.89	2.68
2 vs 3	55.64 - 55.83	.19	.00

*Mean square within required for calculation of Scheffé's test was 223.07.
**Significant beyond the .05 level.

Table 24 reports the results when Scheffé's test was used to determine which mean differences were significant on factor 2 of the PTO. It was found that the mean difference between groups 1 and 2 was significant beyond the .05 level.

TABLE 24

COMPARISON OF MEANS ON FACTOR 2 OF THE PTO AMONG TEACHERS HAVING DIFFERENT EDUCATIONAL PREPARATION GROUP MEMBERSHIP

Group Comparisons	Means	Mean Difference	Scheffé F*
1 vs 2	60.72 - 55.64	5.08	16.03**
1 vs 3	60.72 - 55.83	4.89	3.60
2 vs 3	55.64 - 55.83	.19	.01

*Mean square within required for calculation of Scheffé's test was 161.63.
**Significant beyond the .05 level.

TABLE 25

COMPARISON OF MEANS ON FACTOR 5 OF THE PTO AMONG TEACHERS HAVING DIFFERENT EDUCATIONAL PREPARATION GROUP MEMBERSHIP

Group Comparisons	Means	Mean Difference	Scheffé F*
1 vs 3	32.30 - 27.90	4.40	4.85
1 vs 2	32.30 - 29.72	2.58	6.68**
2 vs 3	29.72 - 27.90	1.82	.92

*Mean square within term required for calculation of Scheffé's test was 99.74.
**Significant beyond the .05 level.

Table 26 reports the results when Scheffé's test was used to determine which mean differences were significant on factor 6 of the PTO. It was found that the mean difference between groups 1 and 2 was significant beyond the .05 level.

TABLE 26

COMPARISON OF MEANS ON FACTOR 6 OF THE PTO AMONG TEACHERS HAVING DIFFERENT EDUCATIONAL PREPARATION GROUP MEMBERSHIP

Group Comparisons	Means	Mean Difference	Scheffé F*
1 vs 3	13.96 - 12.17	1.79	4.57
1 vs 2	13.96 - 12.76	1.20	8.23**
2 vs 3	12.76 - 12.17	.59	.06

*Mean square within term required for calculation of Scheffé's test was 17.80.
**Significant beyond the .05 level.

Table 27 reports the results when Scheffé's test was used to determine which mean differences were significant on factor 7 of the PTO. It was found that the mean differences obtained between teachers with less than a B.A. and an M.A. Degree and those with less than a B.A. and a B.A. Degree were significant beyond the .05 level with the non-degree group having the highest morale.

TABLE 27

COMPARISON OF MEANS ON FACTOR 7 OF THE PTO AMONG TEACHERS HAVING DIFFERENT EDUCATIONAL PREPARATION GROUP MEMBERSHIP

Group Comparisons	Means	Mean Difference	Scheffé F*
1 vs 3	22.68 - 19.30	3.38	6.68**
1 vs 2	22.68 - 20.71	1.97	9.07**
2 vs 3	20.71 - 19.30	1.41	1.29

*Mean square within term required for calculation of Scheffé's test was 42.78.
**Significant beyond the .05 level.

Table 28 reports the results when Scheffé's test was used to determine which mean differences were significant on factor 8 of the PTO. It was found that the mean differences obtained between teachers with less than a B.A. and an M.A. Degree and those with less than a B.A. and a B.A. Degree were significant beyond the .05 level with the non-degree group having the highest morale.

TABLE 28

COMPARISON OF MEANS ON FACTOR 8 OF THE PTO AMONG TEACHERS HAVING DIFFERENT EDUCATIONAL PREPARATION GROUP MEMBERSHIP

Group Comparisons	Means	Mean Difference	Scheffé F*
1 vs 3	15.66 - 13.80	1.86	67.84**
1 vs 2	15.66 - 14.47	1.19	11.18**
2 vs 3	14.47 - 13.80	.67	.10

*Mean square within term required for calculation of Scheffé's test was 12.70.
**Significant beyond the .05 level.

Table 29 reports the results when Scheffe's test was used to determine which mean differences were significant on the PTO total score. It was found that the mean difference obtained between teachers with less than a B.A. and those with an M.A. Degree was significant beyond the .05 level with the non-degree group having the higher morale.

TABLE 29

COMPARISON OF MEANS ON THE TOTAL SCORE OF THE PTO AMONG TEACHERS HAVING DIFFERENT EDUCATIONAL PREPARATION GROUP MEMBERSHIP

Group Comparisons	Means	Mean Difference	Scheffé F*
1 vs 3	301.64 - 276.37	25.27	4.66
1 vs 2	301.64 - 280.15	21.49	13.48**
2 vs 3	280.15 - 276.37	3.78	.12

*Mean square within term required for calculation of Scheffé's test was 3426.84.
**Significant beyond the .05 level.

Null Hypothesis (3-D). There were no significant differences in morale among teachers of different years of teaching experience when the PTO factor scores and total score were used as the criteria.

The following four teaching experience groups formed the research population: (1) 1-3, (2) 4-9, (3) 10-19, and (4) 20 or more years teaching experience.

Table 30 presents a comparison of teacher means for teacher PTO factors and total score by years teaching experience. A comparison of the means indicated that the more experienced teachers had higher morale scores on the various PTO factors and total score than the less experienced teachers. The F-ratios for the one-way analysis of variance reported in Table 30 indicated that there was a significant difference in morale among the four teaching experience groups when factors 1, 2, 8, 9, and total score were used as the criteria.

When educational preparation and age were controlled for factors 1, 2, 8, 9, and total score, analysis of covariance for the regression indicated that the difference in means was significant for all the comparisons. Therefore, the null hypothesis was rejected when those factors and the total score were used as the criteria. The null hypothesis must be retained when the remaining factors were used as the criteria.

TABLE 30

COMPARISON OF MEANS FOR TEACHER PTO FACTORS AND TOTAL SCORE BY YEARS OF TEACHING EXPERIENCE (N=545)

Factor	1 1-3 N=190	2 4-9 N=140	3 10-19 N=123	4 20+ N=92	Anova*		Covar**		
					R_{FM}	F-Ratio	R_{FM}	R_{RM}	F-Ratio
1	56.74	54.98	59.77	58.88	.121	2.66***	.148	.035	2.85***
2	65.28	64.51	68.91	70.00	.169	5.30***	.226	.074	6.48***
3	41.82	41.89	42.86	42.87	.047	.40			
4	16.22	16.58	17.48	17.91	.111	2.23			
5	29.95	29.49	30.83	31.80	.080	1.16			
6	12.85	12.62	13.65	13.38	.096	1.67			
7	20.70	20.44	21.52	21.89	.115	2.40			
8	14.10	14.56	15.69	15.27	.176	5.79***	.196	.040	5.16***
9	11.98	11.73	12.81	12.82	.120	2.62***	.143	.057	2.39***
10	15.16	15.68	15.67	15.84	.089	1.45			
TS	280.75	278.24	295.91	295.13	.132	3.21***	.224	.138	4.42***

*R_{FM} refers to the multiple correlation obtained from the full model.
**Educational Preparation and Age Controlled. R_{RM} refers to the multiple correlation obtained from the restricted model.
***Significant beyond the .05 level.

The Scheffé test was used to determine which of the mean differences were significant on factors 1, 2, 8, 9, and total score of the PTO. Tables 31 through 35 report the results when Scheffé's test was used. Table 31 reports the results when Scheffé's test was used to determine which mean differences were significant on factor 1 of the PTO. It was found that the significant F-ratio obtained in Table 30

for factor 1 was due to the mean difference obtained between teachers in the 4-9 years experience group and those teachers having 10-19 years teaching experience. The comparison was significant beyond the .05 level.

TABLE 31

COMPARISON OF MEANS ON FACTOR 1 OF THE PTO AMONG TEACHERS HAVING DIFFERENT TEACHING EXPERIENCE GROUP MEMBERSHIP

Group Comparisons	Means	Mean Difference	Scheffé F*
2 vs 3	54.98 - 59.77	4.79	8.24**
2 vs 4	54.98 - 58.88	3.90	5.06
1 vs 3	56.74 - 59.77	3.03	2.53
1 vs 2	56.74 - 54.98	1.76	.90
1 vs 4	56.74 - 58.88	2.14	1.13
3 vs 4	59.77 - 58.88	.89	.18

*Mean square within term required for calculation of Scheffé's test was 224.64.
**Significant beyond the .05 level.

Table 32 reports the results when Scheffé's test was used to determine which mean differences were significant on factor 2 of the PTO. It was found that the significant F-ratio obtained in Table 30 for factor 2 was due to the mean differences obtained between teachers of groups 2 (4-9 years experience) and 4 (20 plus years experience) and groups 1 (less than three years experience) and 4. Significant differences were also obtained between groups 2 and 3 (10-19 years

experience). All three group comparisons were significant beyond the .05 level with group 4 having the highest morale.

TABLE 32

COMPARISON OF MEANS ON FACTOR 2 OF THE PTO AMONG TEACHERS HAVING DIFFERENT TEACHING EXPERIENCE GROUP MEMBERSHIP

Group Comparisons	Means	Mean Difference	Scheffé F*
2 vs 4	64.51 - 70.00	5.49	10.08**
1 vs 4	65.28 - 70.00	4.72	8.33**
2 vs 3	64.51 - 68.91	4.40	7.62**
1 vs 3	65.28 - 68.91	3.63	5.92
3 vs 4	68.91 - 70.00	1.09	.38
2 vs 1	64.51 - 65.28	.77	.29

*Mean square within term required for calculation of Scheffé's test was 166.16.
**Significant beyond the .05 level.

Table 33 reports the results when Scheffé's test was used to determine which mean differences were significant on factor 8 of the PTO. It was found that the significant F-ratio obtained in Table 30 for factor 8 was due to the mean differences obtained between teachers of groups 1 (less than three years experience) and 3 (10-19 years experience). The group comparison was significant beyond the .05 level with group 3 having the higher morale.

TABLE 33

COMPARISON OF MEANS ON FACTOR 8 OF THE PTO AMONG TEACHERS HAVING DIFFERENT TEACHING EXPERIENCE GROUP MEMBERSHIP

Group Comparisons	Means	Mean Difference	Scheffé F*
1 vs 3	14.10 - 15.69	1.59	14.88**
1 vs 4	14.10 - 15.27	1.17	6.72
2 vs 3	14.56 - 15.69	1.13	6.67
2 vs 4	14.56 - 15.27	.71	2.22
1 vs 2	14.10 - 14.56	.46	1.34
3 vs 4	15.69 - 15.27	.42	.74

*Mean square within term required for calculation of Scheffé's test was 12.65.
**Significant beyond the .05 level.

Table 34 reports the results when Scheffé's test was used to determine which mean differences were significant on factor 9 of the PTO. It was found that the significant F-ratio obtained in Table 30 for factor 9 was not due to any significant mean differences but was probably due to a general spread among the means. Group 4 had the highest morale.

Table 35 reports the results when Scheffé's test was used to determine which mean differences were significant on the PTO total score. It was found that the significant F-ratio obtained in Table 30 for the total score was not due to any significant mean differences, but was probably due to a general spread among all the means. Group 3 had the highest morale.

TABLE 34

COMPARISON OF MEANS ON FACTOR 9 OF THE PTO AMONG TEACHERS HAVING DIFFERENT TEACHING EXPERIENCE GROUP MEMBERSHIP

Group Comparisons	Means	Mean Difference	Scheffé F*
2 vs 4	11.73 - 12.82	1.09	4.27
2 vs 3	11.73 - 12.81	1.08	4.92
1 vs 4	11.98 - 12.82	.84	2.83
1 vs 3	11.98 - 12.81	.83	3.35
1 vs 2	11.98 - 11.73	.25	.33
3 vs 4	12.81 - 12.82	.01	.00

*Mean square within term required for calculation of Scheffé's test was 15.47.

TABLE 35

COMPARISON OF MEANS ON THE TOTAL SCORE OF THE PTO AMONG TEACHERS HAVING DIFFERENT TEACHING EXPERIENCE GROUP MEMBERSHIP

Group Comparisons	Means	Mean Difference	Scheffé F*
2 vs 3	278.24 - 295.91	17.67	5.92
2 vs 4	278.24 - 295.13	16.89	4.57
1 vs 3	280.75 - 295.91	15.16	4.95
1 vs 4	280.75 - 295.13	14.38	3.70
1 vs 2	280.75 - 278.24	2.51	.15
3 vs 4	295.91 - 295.13	.78	.01

*Mean square within term required for calculation of Scheffé's test was 3467.86.

Null Hypothesis (3-E). There were no significant differences in morale between elementary (K-8) and secondary (9-12) teachers when the PTO factor scores and total score were used as the criteria.

Table 36 presents a comparison of teacher means for teacher PTO factors and total score by teaching assignment. For all factor scores and total score, elementary teachers scored higher than secondary teachers. The F-ratio for the one-way analysis of variance reported in Table 36 indicated that there was a significant difference in morale between elementary and secondary teachers when factors 1, 2, 4-8, 10, and total score were used as the criteria.

When educational preparation, years teaching experience and age were controlled for factors 1, 2, 4-8, 10, and total score, analysis of covariance for the regression indicated that the difference in means was significant for factors 2, 4-8 and total score. Therefore the null hypothesis was rejected when those factors and the total score were used as the criteria. The null hypothesis was retained when the remaining factors were used as the criteria. The Scheffé test was not used to determine the differences in mean scores because only two groups were used in the analysis. When significance was found it was due to the group having the higher score, namely elementary teachers.

Null Hypothesis (3-F). There were no significant differences in morale between those teachers who are new and those who are returning to the school district when the PTO factor scores and total score were used as the criteria.

TABLE 36

COMPARISON OF MEANS FOR TEACHER PTO FACTORS AND TOTAL SCORE BY TEACHING ASSIGNMENT (N=545)

Factor	1 Elementary N=297	2 Secondary N=248	Anova*		Covar**		
			R_{FM}	F-Ratio	R_{FM}	R_{RM}	F-Ratio
1	58.83	55.85	.089	4.32***	.121	.110	1.39
2	65.24	59.60	.216	26.50***	.259	.074	35.67***
3	42.69	41.72	.046	1.15			
4	17.50	16.14	.114	7.12***	.131	.036	8.72***
5	31.66	28.74	.145	11.64***	.176	.051	15.82***
6	13.54	12.48	.125	8.65***	.189	.085	15.96***
7	22.17	19.99	.165	15.11***	.205	.171	6.86***
8	15.29	14.13	.161	14.45***	.195	.162	6.67***
9	12.32	12.15	.021	.24			
10	15.81	15.19	.101	5.60***	.135	.120	2.10
TS	294.19	275.95	.153	13.10***	.224	.204	4.87***

*R_{FM} refers to the multiple correlation obtained from the full model.
**Educational Preparation, Years Teaching Experience, and Age Controlled. R_{RM} refers to the multiple correlation obtained from the restricted model.
***Significant beyond the .05 level.

Table 37 presents a comparison of teacher means for teacher PTO factors and total score by whether the teacher was new or returning to the school system. An examination of the means for the two groups of teachers indicated that none of the factor scores or total score discriminated between the two groups. The F-ratio for the one-

way analysis of variance reported in Table 37 indicated that there was no significant difference in morale between those teachers who are new or returning to the school district regardless of the PTO scores used to measure morale. Therefore the null hypothesis was retained.

TABLE 37

COMPARISON OF MEANS FOR TEACHER PTO FACTORS AND TOTAL SCORE BY WHETHER THE TEACHER IS NEW OR RETURNING TO THE SCHOOL DISTRICT (N=545)

Factor	1 New N=134	2 Returning N=411	Anova* R_{FM}	Anova* F-Ratio
1	58.03	57.08	.027	.41
2	61.15	63.18	.067	2.45
3	42.65	42.11	.022	.27
4	16.85	16.89	.003	.01
5	29.23	30.69	.063	2.14
6	12.53	13.23	.071	2.79
7	20.79	21.31	.034	.62
8	14.69	14.75	.007	.02
9	12.20	12.25	.006	.02
10	15.33	15.59	.037	.75
TS	283.57	286.65	.022	.27

*R_{FM} refers to the multiple correlation obtained from the full model.

Null Hypothesis (3-G). There were no significant differences in morale among teachers who teach at schools with different accreditation ratings when the PTO factor scores and total score were used as the criteria.

The following three accreditation groups formed the research population: (1) number 2, (2) number 3, and (3) number 4 rated schools.

Table 38 presents a comparison of teacher means for teacher PTO factors and total score by school accreditation ratings. An examination

TABLE 38

COMPARISON OF MEANS FOR TEACHER PTO FACTORS AND TOTAL SCORE BY SCHOOL ACCREDITATION RATINGS (N=545)

Factor	1 rating 2 N=225	2 rating 3 N=285	3 rating 4 N=35	Anova* R_{FM}	Anova* F-Ratio
1	56.83	57.69	57.44	.033	.29
2	61.65	63.53	62.33	.082	1.84
3	42.29	42.18	42.48	.016	.07
4	17.33	16.60	16.22	.104	2.97
5	30.08	30.63	29.50	.062	1.03
6	13.16	13.01	12.85	.039	.42
7	21.38	21.05	20.97	.036	.35
8	14.84	14.68	14.99	.047	.60
9	12.12	12.34	12.14	.035	.34
10	15.50	15.56	15.46	.017	.08
TS	284.65	287.10	284.09	.030	.24

*R_{FM} refers to the multiple correlation obtained from the full model.

of the means reveals that the means were approximately equal for the three groups and that there was no trend favoring one group over another. The F-ratios for the one-way analysis of variance reported

in Table 38 indicated that there were no significant differences in morale among teachers grouped according to school accreditation ratings when the various PTO factors and total score were used as the criteria. Therefore the null hypothesis was retained. Since one-way analysis of variance did not reveal any significant differences in morale no attempt was made to analyze the data by analysis of covariance for the regression.

Null Hypothesis (3-H). There were no significant differences in morale among teachers who teach at schools with different rates of teacher turnover when the PTO factor scores and total score were used as the criteria.

The following three teacher turnover groups formed the research population: (1) less than 16, (2) 16-28, and (3) 29 per cent or more teacher turnover.

Table 39 presents a comparison of teacher means for teacher PTO factors and total score by teacher turnover rate in schools. For total score and all factor scores, teachers from the lowest per cent of teacher turnover districts had the highest scores. The F-ratios for the one-way analysis of variance reported in Table 39 indicated that there was a significant difference in morale among teachers who were grouped according to teacher turnover rate when factors 2-7, 9, and total score were used as the criteria.

When educational preparation, years teaching experience, and age were controlled for factors 2-7, 9, and total score, analysis of covariance for the regression indicated that the difference in means was significant on factors 2, 4-7, 9, and total score. Therefore

the null hypothesis was rejected when these factors and the total score were used as the criteria. The null hypothesis was retained when the remaining factors were used as the criteria.

TABLE 39

COMPARISON OF MEANS FOR TEACHER PTO FACTORS AND TOTAL SCORE BY TEACHER TURNOVER RATE IN SCHOOL DISTRICTS (N=545)

Factor	1 0-15% N=247	2 16-28% N=194	3 29+% N=104	Anova*		Covar**		
				R_{FM}	F-Ratio	R_{FM}	R_{RM}	F-Ratio
1	58.24	55.93	57.73	.086	2.03			
2	64.17	60.91	62.44	.133	4.91***	.254	.217	3.29***
3	43.17	41.02	42.34	.110	3.30***	.136	.081	2.19
4	18.18	15.78	15.86	.254	18.68***	.270	.101	12.15***
5	31.71	28.99	29.57	.155	6.69***	.212	.145	4.50***
6	13.67	12.43	12.74	.166	7.69***	.242	.176	5.24***
7	22.10	20.27	20.68	.158	6.90***	.234	.171	4.85***
8	14.54	15.04	14.80	.075	1.52			
9	12.71	11.71	12.13	.136	5.10***	.182	.127	3.16***
10	15.57	15.64	15.23	.086	2.04			
TS	293.49	277.62	283.30	.146	5.87***	.253	.204	4.30***

*R_{FM} refers to the multiple correlation obtained from the full model.
**Educational Preparation, Years Teaching Experience, and Age Controlled. R_{RM} refers to the multiple correlation obtained from the restricted model.
***Significant beyond the .05 level.

The Scheffé test was used to determine which of the mean differences were significant on factors 2, 4-7, 9 and total score of the PTO. Tables 40 through 46 report the results when Scheffé's test was used.

Table 40 reports the results when Scheffé's test was used to determine which mean differences were significant on factor 2 of the PTO. It was found that the significant F-ratio obtained in Table 39 for factor 2 was due to the mean differences obtained between teachers of groups 1 (0-15 per cent turnover) and 2 (16-28 per cent turnover). The difference was significant beyond the .05 level with group 1 having the higher morale.

TABLE 40

COMPARISON OF MEANS ON FACTOR 2 OF THE PTO AMONG TEACHERS FROM SCHOOL DISTRICTS HAVING DIFFERENT RATES OF TEACHER TURNOVER

Group Comparison	Means	Mean Difference	Scheffé F*
1 vs 2	64.17 - 60.91	3.26	7.04**
1 vs 3	64.17 - 62.44	1.73	1.28
2 vs 3	60.91 - 62.44	1.53	.93

*Mean square within term required for calculation of Scheffé's test was 167.68.
**Significant at the .05 level.

Table 41 reports the results when Scheffé's test was used to determine which mean differences were significant on factor 4 of the PTO. It was found that the significant F-ratio obtained in Table 39 for factor 4 was due to the mean differences obtained between teachers of groups 1 (0-15 per cent turnover) and 2 (16-28 per cent turnover) and between groups 1 and 3 (29 plus per cent turnover). Both group comparisons were significant beyond the .05 level with group 1 having the higher morale.

TABLE 41

COMPARISON OF MEANS ON FACTOR 4 OF THE PTO AMONG TEACHERS FROM SCHOOL DISTRICTS HAVING DIFFERENT RATES OF TEACHER TURNOVER

Group Comparison	Means	Mean Difference	Scheffé F*
1 vs 2	18.18 - 15.78	2.40	19.26**
1 vs 3	18.18 - 15.86	2.32	11.57**
2 vs 3	15.78 - 15.86	.10	.02

*Mean square within term required for calculation of Scheffé's test was 33.24.
**Significant at the .05 level.

Table 42 reports the results when Scheffé's test was used to determine which mean differences were significant on factor 5 of the PTO. It was found that the significant F-ratio obtained in Table 39 for factor 5 was due to the mean difference obtained between teachers of groups 1 (0-15 per cent turnover) and 2 (16-28 per cent turnover). The mean difference was significant beyond the .05 level of significance with group 1 having the higher morale.

Table 43 reports the results when Scheffé's test was used to determine which mean differences were significant on factor 6 of the PTO. It was found that the significant F-ratio obtained in Table 39 for factor 6 was due to the mean difference obtained between teachers of groups 1 (0-15 per cent turnover) and 2 (16-28 per cent turnover). The mean difference was significant beyond the .05 level with group 1 having the higher morale score on factor 6.

TABLE 42

COMPARISON OF MEANS ON FACTOR 5 OF THE PTO AMONG TEACHERS FROM SCHOOL DISTRICTS HAVING DIFFERENT RATES OF TEACHER TURNOVER

Group Comparison	Means	Mean Difference	Scheffé F*
1 vs 2	31.72 - 28.99	2.73	8.37**
1 vs 3	31.72 - 29.57	2.15	3.32
2 vs 3	28.99 - 29.57	.58	.23

*Mean square within term required for calculation of Scheffé's test was 98.97.
**Significant at the .05 level.

TABLE 43

COMPARISON OF MEANS ON FACTOR 6 OF THE PTO AMONG TEACHERS FROM SCHOOL DISTRICTS HAVING DIFFERENT RATES OF TEACHER TURNOVER

Group Comparison	Means	Mean Difference	Scheffé F*
1 vs 2	13.67 - 12.43	1.24	9.87**
1 vs 3	13.67 - 12.74	.93	3.54
2 vs 3	12.43 - 12.74	.31	.04

*Mean square within term required for calculation of Scheffé's test was 17.33.
**Significant at the .05 level.

Table 44 reports the results when Scheffé's test was used to determine which mean differences were significant on factor 7 of the PTO. It was found that the significant F-ratio obtained in Table 39 for factor 7 was due to the mean difference obtained between teachers

of groups 1 (0-15 per cent turnover) and 2 (16-28 per cent turnover). The mean difference was significant beyond the .05 level with group 1 having the higher morale score on factor 7.

TABLE 44

COMPARISON OF MEANS ON FACTOR 7 OF THE PTO AMONG TEACHERS FROM SCHOOL DISTRICTS HAVING DIFFERENT RATES OF TEACHER TURNOVER

Group Comparisons	Means	Mean Difference	Scheffé F*
1 vs 2	22.10 - 20.27	1.83	8.72**
1 vs 3	22.10 - 20.68	1.42	3.38
2 vs 3	20.27 - 20.68	.41	.26

*Mean square within term required for calculation of Scheffé's test was 42.67.
**Significant beyond the .05 level.

Table 45 reports the results when Scheffé's test was used to determine which mean differences were significant on factor 9 of the PTO. It was found that the significant F-ratio obtained in Table 39 for factor 9 was due to the mean difference obtained between teachers of groups 1 (0-15 per cent turnover) and 2 (16-28 per cent turnover). The difference was significant beyond the .05 level with group 1 having the higher morale score on factor 9 of the PTO.

TABLE 45

COMPARISON OF MEANS ON FACTOR 9 OF THE PTO AMONG TEACHERS FROM SCHOOL DISTRICTS HAVING DIFFERENT RATES OF TEACHER TURNOVER

Group Comparison	Means	Mean Difference	Scheffé F*
1 vs 2	12.71 - 11.71	1.00	7.25**
1 vs 3	12.71 - 12.13	.58	1.56
2 vs 3	11.71 - 12.13	.42	.76

*Mean square within term required for calculation of Scheffé's test was 15.37.
**Significant beyond the .05 level.

Table 46 reports the results when Scheffé's test was used to determine which mean differences were significant on the PTO total score. It was found that the significant F-ratio obtained in Table 39 for the total score was due to the mean differences obtained between teachers of groups 1 (0-15 per cent turnover) and 2 (16-28 per cent turnover). The comparison was significant beyond the .05 level with group 1 having the higher total morale score on the PTO.

Null Hypothesis (3-I). There were no significant differences in morale among teachers grouped according to faculty size when the PTO factor scores and total score were used as the criteria.

The following three faculty size groups formed the research population: (1) 16 or less, (2) 17-33, and (3) 34 or more teachers per school district.

TABLE 46

COMPARISON OF MEANS ON THE TOTAL SCORE OF THE PTO AMONG TEACHERS FROM SCHOOL DISTRICTS HAVING DIFFERENT RATES OF TEACHER TURNOVER

Group Comparison	Means	Mean Difference	Scheffé F*
1 vs 2	293.49 - 277.62	15.87	8.12**
1 vs 3	293.49 - 283.30	10.19	2.15
2 vs 3	277.62 - 283.30	5.68	.62

*Mean square within term required for calculation of Scheffé's test was 3448.32.
**Significant at the .05 level.

Table 47 presents a comparison of teacher means for teacher PTO factors and total score by faculty size. For total score and all factor scores, teachers from the largest schools had the highest morale scores. F-ratios for the one-way analysis of variance reported in Table 47 indicated that there was a significant difference in morale among teachers grouped by faculty size when factors 2-7, 9, and total score were used as the criteria.

When educational preparation, years teaching experience, and age were controlled for factors 2-7, 9, and total score, analysis of covariance for the regression indicated that the differences in means were significant for all comparisons. Therefore the null hypothesis was rejected when these factors and the total score were used as the criteria. The null hypothesis was retained when the remaining factors were used as the criteria.

TABLE 47

COMPARISON OF MEANS FOR TEACHER PTO FACTORS AND TOTAL SCORE BY FACULTY SIZE (N=545)

Factor	1 0-16 N=137	2 17-33 N=206	3 34+ N=202	Anova* R_{FM}	Anova* F-Ratio	Covar** R_{FM}	Covar** R_{RM}	Covar** F-Ratio
1	56.60	55.88	59.26	.101	2.79			
2	60.09	61.75	65.37	.166	7.70***	.283	.217	9.67***
3	40.05	40.61	45.10	.209	12.35***	.227	.080	12.83***
4	15.21	15.44	19.49	.337	34.74***	.359	.101	36.72***
5	28.03	28.95	33.30	.230	15.08***	.277	.145	16.27***
6	12.21	12.42	14.27	.222	14.10***	.290	.176	16.61***
7	19.93	19.86	23.37	.255	18.85***	.319	.171	21.76***
8	15.16	14.45	14.81	.077	1.63			
9	12.03	11.71	12.93	.137	5.18***	.188	.127	5.37***
10	15.51	15.32	15.74	.059	.96			
TS	275.28	276.20	302.96	.221	13.97***	.315	.209	16.62***

*R_{FM} refers to the multiple correlation obtained from the full model.
**Educational Preparation, Years Teaching Experience, and Age Controlled. R_{RM} refers to the multiple correlation obtained from the restricted model.
***Significant beyond the .05 level.

The Scheffé test was used to determine which of the mean differences were significant on factors 2-7, 9, and total score of the PTO. Tables 48 through 55 report the results when Scheffé's test was used.

Table 48 reports the results when Scheffé's test was used to determine which mean differences were significant on factor 2 of the

PTO. It was found that the significant F-ratio obtained in Table 47 for factor 2 was due to the mean difference obtained between teachers of groups 1 (0-16 faculty members) and 3 (34 and more faculty members) and between groups 2 (17-33 faculty members) and 3. Both group comparisons were significant beyond the .05 level with group 3 having the highest morale score on factor 2, then groups 2 and 1 respectively.

TABLE 48

COMPARISON OF MEANS ON FACTOR 2 OF THE PTO AMONG TEACHERS HAVING DIFFERENT FACULTY SIZE GROUP MEMBERSHIP

Group Comparisons	Means	Mean Difference	Scheffé F*
1 vs 3	60.09 - 65.37	5.28	14.01**
2 vs 3	61.75 - 65.37	3.62	7.89**
1 vs 3	60.09 - 61.75	1.66	.19

*Mean square within term required for calculation of Scheffé's test was 166.01.
**Significant beyond the .05 level.

Table 49 reports the results when Scheffé's test was used to determine which mean differences were significant on factor 3 of the PTO. It was found that the significant F-ratio obtained in Table 47 for factor 3 was due to the mean differences obtained between teachers of groups 1 (0-16 teachers) and 3 (34 and more teachers) and between groups 2 (17-33 teachers) and 3. Both group comparisons were significant beyond the .05 level of significance with group 3 having the highest morale score on factor 3, then groups 2 and 1 respectively.

TABLE 49

COMPARISON OF MEANS ON FACTOR 3 OF THE PTO AMONG TEACHERS HAVING DIFFERENT FACULTY SIZE GROUP MEMBERSHIP

Group Comparisons	Means	Mean Difference	Scheffé F*
1 vs 3	40.04 - 45.10	5.05	20.08**
2 vs 3	40.61 - 45.10	4.49	19.02**
1 vs 2	40.05 - 40.61	.56	.24

*Mean square within term required for calculation of Scheffé's test was 105.80.
**Significant beyond the .05 level.

Table 50 reports the results when Scheffé's test was used to determine which mean differences were significant on factor 4 of the PTO. It was found that the significant F-ratio obtained in Table 47 for factor 4 was due to the mean difference obtained between teachers of groups 1 (0-16 teachers) and 3 (34 and more teachers). A significant difference was also obtained between groups 2 (17-33 teachers) and 3. Both group comparisons were significant beyond the .05 level of significance with group 3 having the highest morale score on factor 4.

Table 51 reports the results when Scheffé's test was used to determine which mean differences were significant on factor 5 of the PTO. It was found that the significant F-ratio obtained in Table 47 for factor 5 was due to the mean difference obtained between teachers of groups 1 (0-16 teachers) and 3 (34 and more teachers). A significant difference was also obtained between groups 2 (17-33 teachers)

and 3. Both group comparisons were significant beyond the .05 level with group 3 having the highest morale score on factor 5.

TABLE 50

COMPARISON OF MEANS ON FACTOR 4 OF THE PTO AMONG TEACHERS HAVING DIFFERENT FACULTY SIZE GROUP MEMBERSHIP

Group Comparisons	Means	Mean Difference	Scheffé F*
1 vs 3	15.21 - 19.49	4.28	48.21**
2 vs 3	15.44 - 19.49	4.05	52.90**
1 vs 2	15.21 - 15.44	.23	.15

*Mean square within term required for calculation of Scheffé's test was 31.48.
**Significant beyond the .05 level.

TABLE 51

COMPARISON OF MEANS ON FACTOR 5 OF THE PTO AMONG TEACHERS HAVING DIFFERENT FACULTY SIZE GROUP MEMBERSHIP

Group Comparisons	Means	Mean Difference	Scheffé F*
1 vs 3	28.03 - 33.30	5.27	24.15**
2 vs 3	28.95 - 33.30	4.35	19.71**
1 vs 2	28.03 - 28.95	.92	.07

*Mean square within term required for calculation of Scheffé's test was 96.06.
**Significant beyond the .05 level.

Table 52 reports the results when Scheffé's test was used to determine which mean differences were significant on factor 6 of the

PTO. It was found that the significant F-ratio obtained in Table 47 fo factor 6 was due to the mean difference obtained between teachers of groups 1 (0-16 teachers) and 3 (34 and more teachers). A significant difference was also obtained between groups 2 (17-33 teachers) and 3. Both group comparisons were significant beyond the .05 level with grou 3 having the highest morale score on factor 6.

TABLE 52

COMPARISON OF MEANS ON FACTOR 6 OF THE PTO AMONG TEACHERS HAVING DIFFERENT FACULTY SIZE GROUP MEMBERSHIP

Group Comparisons	Means	Mean Difference	Scheff F*
1 vs 3	12.21 - 14.27	2.06	21.20**
2 vs 3	12.42 - 14.27	1.85	20.12**
1 vs 2	12.21 - 12.42	.21	.20

*Mean square within term required for calculation of Scheffé's test was 16.94.
**Significant beyond the .05 level.

Table 53 reports the results when Scheffé's test was used to determine which mean differences were significant on factor 7 of the PTO. It was found that the significant F-ratio obtained in Table 47 for factor 7 was due to the mean differences obtained between teachers of groups 2 (17-33 teachers) and 3 (34 and more teachers) and between groups 1 (0-16 teachers) and 3. Both group comparisons were significant beyond the .05 level of significance with group 3 having the highest morale score on factor 7.

TABLE 53

COMPARISON OF MEANS ON FACTOR 7 OF THE PTO AMONG TEACHERS HAVING DIFFERENT FACULTY SIZE GROUP MEMBERSHIP

Group Comparisons	Means	Mean Difference	Scheffé F*
2 vs 3	19.86 - 23.37	3.51	30.80**
1 vs 3	19.93 - 23.37	3.44	24.14**
1 vs 2	19.93 - 19.86	.07	.01

*Mean square within term required for calculation of Scheffé's test was 40.91.
**Significant beyond the .05 level.

Table 54 reports the results when Scheffé's test was used to determine which mean differences were significant on factor 9 of the PTO. It was found that the significant F-ratio obtained in Table 47 for factor 9 was due to the mean difference obtained between teachers of groups 2 (17-33 teachers) and 3 (34 and more teachers). The difference was significant beyond the .05 level of significance with group 3 having the higher morale score on factor 9.

Table 55 reports the results when Scheffé's test was used to determine which mean differences were significant on the PTO total score. It was found that the significant F-ratio obtained in Table 47 for the total score was due to the mean differences obtained between teachers of groups 1 (0-16 teachers) and 3 (34 and more teachers), and between groups 2 (17-33 teachers) and 3. Both group comparisons were significant beyond the .05 level with group 3 having the highest total morale score.

TABLE 54

COMPARISON OF MEANS ON FACTOR 9 OF THE PTO AMONG TEACHERS HAVING DIFFERENT FACULTY SIZE GROUP MEMBERSHIP

Group Comparisons	Means	Mean Difference	Scheffé F*
2 vs 3	11.71 - 12.93	1.22	9.93**
1 vs 3	12.03 - 12.93	.90	4.50
1 vs 2	12.03 - 11.71	.32	.56

*Mean square within term required for calculation of Scheffé's test was 15.37.
**Significant beyond the .05 level.

TABLE 55

COMPARISON OF MEANS ON THE TOTAL SCORE OF THE PTO AMONG TEACHERS HAVING DIFFERENT FACULTY SIZE GROUP MEMBERSHIP

Group Comparisons	Means	Mean Difference	Scheffé F*
1 vs 3	275.28 - 302.96	27.68	19.06**
2 vs 3	276.20 - 302.96	26.76	21.38**
1 vs 2	275.28 - 276.20	.92	.02

*Mean square within term required for calculation of Scheffé's test was 3350.35.
**Significant beyond the .05 level.

CHAPTER V

SUMMARY, DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS

Summary

The major purpose of this study was to determine whether significant differences in morale existed among teachers employed by rural school districts.

The major hypotheses which were tested were formulated from the following questions:

1. What combination of biographical variables best predict teacher morale?
2. What differences in morale exist among teachers grouped according to selected levels of salary?
3. What differences in morale exist among teachers grouped according to different levels of salary increases received?
4. What effect do the following biographical variables have on teacher morale: (a) age, (b) sex, (c) educational preparation, (d) years teaching experience, (e) teaching assignment, (f) teachers new to the system or returning, (g) accreditation level of school, (h) rate of teacher turnover, and (i) school size?

Previous research has been conducted concerning the assessment, component parts, and effect of morale on learning. The common findings

of this research indicated that factor analytic methods were the best techniques for developing morale measuring instruments. The findings also indicated that morale was multidimensional and was composed of a number of different factors. Certain biographical variables such as age, sex, education, and years teaching experience were reported as being related to morale. Salary was reported to affect morale, but only to the point that it satisfies basic needs. Finally, the research indicated that morale and productivity were closely related. High morale was reported to be conducive to productivity while the reverse was said to be true for low morale.

The population from which the research sample was taken consisted of all high school districts in North Dakota whose 1968-69 high school enrollment (grades 9-12) was 400 or less. Teachers within those districts during the 1969-70 school year formed the teacher population for objectives one, two and four. Teachers who taught in the same district the previous year (1968-69) formed the teacher population for objective three.

The research sample was obtained from school districts selected as representative of eight regions into which the state was divided according to the map included in the 1970 North Dakota Title III ESEA State Plan (see Appendix A). Forty-six high school districts accredited 2A or lower (the smaller districts with less than 400 secondary enrollment) were randomly selected from the population.

The Purdue Teacher Opinionaire, copyrighted in 1967 by the Purdue Research Foundation, was used for measuring morale. The Opinionaire was designed to provide teachers with an opportunity to

express opinions about their work and various school problems. The Opinionaire had 100 items from which ten factor scores and a total morale score were derived. The factors were: (1) teacher rapport with principal, (2) satisfaction with teaching, (3) rapport among teachers, (4) teacher salary, (5) teacher load, (6) curriculum issues, (7) teacher status, (8) community support of education, (9) school facilities and services, and (10) community pressures.

During the month of October, 1969, superintendents from the 46 selected school districts were contacted by telephone and asked to participate in the study. All the superintendents responded positively. The superintendents were asked to distribute the Opinionaire to their teachers at a faculty meeting held for that purpose. Self-addressed stamped envelopes were provided so that the teachers could mail their Opinionaires directly to the investigator, thus assuring them complete anonymity. Eight-hundred nine Opinionaires were distributed and 545 of them were returned in usable form which was a 67 per cent return.

Responses from each Opinionaire were placed on an IBM scanner sheet and then punched on IBM cards for scoring purposes. Ten factor scores and a total morale score were obtained for each teacher by the IBM 360/30 computer.

The statistical procedure employed in this study for objective 1 was stepwise backward multiple linear regression. The stepwise regression technique was used to isolate the best biographical predictors of morale. Significance for the best predictors was reported at the .05 level. The significant predictors of morale, as measured by the PTO total score, were used as control variables for objectives

2, 3, and 4. These objectives were first analyzed by analysis of variance techniques using the multiple linear regression method to determine the F-ratio. When the F-ratio was significant beyond the .05 level, analysis of covariance for the regression, controlling for the variables identified under objective one, was employed to determine whether the null hypothesis should be rejected. When the null hypothesis was rejected, Scheffe's test was used to determine which pairs of group means were significant beyond the .05 level.

Objective One: Summary of Findings for the Best Biographical Predictors of Morale

The findings for the research population when the PTO factor scores and total score were used as the criteria and the nine biographical variables as the predictors of morale were as follows:

1. When the factor 1 variable of teacher rapport with principal was used as the criterion, the best biographical predictors of morale were years teaching experience, educational preparation, and age. Years teaching experience was the only predictor significant beyond the .05 level.

2. When the factor 2 variable of satisfaction with teaching was used as the criterion, the best biographical predictors of morale were teaching assignment, years teaching experience, and age. All three predictor variables were significant beyond the .05 level.

3. When the factor 3 variable of rapport among teachers was employed as the criterion, the best predictors of morale were faculty size, educational preparation and age. None of the predictor variables contributed significantly to the prediction of morale.

4. When the factor 4 variable of teacher salary was used as the criterion, the best biographical predictors of morale were teacher turnover, faculty size, and teaching assignment. Teacher turnover and faculty size were the only predictor variables which contributed significantly to the prediction of morale beyond the .05 level.

5. When the factor 5 variable of teacher load was used as the criterion, the best biographical predictors of morale were teaching assignment, age, and years experience. All three predictors were significant beyond the .05 level.

6. When the factor 6 variable of curriculum issues was used as the criterion, the best biographical predictors of morale were educational preparation, age, years teaching experience, teacher turnover and faculty size. Years teaching experience, teacher turnover, and faculty size contributed to the prediction of morale beyond the .05 level of significance.

7. When the factor 7 variable of teacher status was used as the criterion, the best biographical predictors of morale were educational preparation, sex, and per cent of teacher turnover. Sex and per cent of teacher turnover were both significant predictors of morale.

8. When the factor 8 variable of community support of education was used as the criterion, the best biographical predictors of morale were sex, teaching assignment, and years teaching experience. Sex and teaching assignment contributed to the prediction of community support beyond the .05 level.

9. When the factor 9 variable of school facilities and services was used as the criterion, the best biographical predictors of

morale were years experience, teacher turnover and age. Years experience and teacher turnover were significant predictors of morale beyond the .05 level.

10. When the factor 10 variable of community services was used as the criterion, the best biographical predictors of morale were teacher turnover, teaching assignment, and age. Teacher turnover emerged as the only significant predictor of morale.

11. When the PTO total morale score was used as the criterion, the best predictors of morale were educational preparation, years experience, and age. These three variables contributed to the prediction of morale beyond the .10 level of significance.

Objective Two: Summary of Findings
Concerning the Effect of Salary on Morale

The findings for the research population when teachers were grouped according to salary levels (less than $5,000, $5,000-$5,999, $6,000-$6,999, $7,000-$7,999, $8,000 and greater) were as follows:

1. A significant difference was found on the PTO factor 2 variable of satisfaction with teaching among teachers grouped according to salary levels. The teachers who belonged to the lowest salary group (less than $5,000) scored significantly higher on factor 2 than group 4 ($7,000-$7,999).

2. No significant differences were found for the other nine PTO factors and the PTO total score among teachers grouped according to salary levels.

Objective Three: Summary of Findings Concerning the Effect of Salary Increases on Morale

The findings for the research population when teachers were grouped according to salary increase levels (less than 4%, 4-6.99%, 7-9.99%, or greater) were as follows:

1. A significant difference was found on the PTO factor 4 variable of teacher salary among the four previously identified groups. The teachers who belonged to the lowest per cent of salary increase group (less than 4 per cent) had significantly lower morale scores on factor 4 than either groups 4 (10 per cent or more) or 2 (4-6.99 per cent).

2. There were no significant differences found for the other nine PTO factors and total score among the four previously identified groups.

Objective Four: Summary of Findings Concerning the Effect Selected Biographical Variables Had on Morale

Age. When teachers were grouped according to age, no significant differences were found when the PTO factors and total score were used as the criteria.

Sex. When teachers were grouped according to sex, no significant differences were found when the PTO factors 1, 3-6, 9, 10 and total score were used as the criteria. A significant difference was found between male and female teachers when factors 2, 7, and 8 were used as the criteria. Female teachers had higher moral scores in all cases where significance was found.

Educational Preparation. When teachers were grouped according to educational preparation, no significant differences were found when

the PTO factors 2, 3, 9 and 10 were used as the criteria. A significant difference was found among teachers grouped according to educational preparation when factors 1, 4-8, and total score were used as the criteria. Where significance was found, teachers with the least amount of education (less than B.A. Degrees) had higher morale scores than B.A. teachers on factors 1, 2, 5 and 6. Less than B.A. Degree teachers also had significantly higher scores on factors 7, 8 and total score than the B.A. and M.A. teachers. No significant differences were found between B.A. and M.A. teachers.

Years Teaching Experience. When teachers were grouped according to years teaching experience, no significant differences were found when the PTO factors 3-7 and 10 were used as the criteria. A significant difference was found when factors 1, 2, 8, 9 and total score were used as the criteria. Group 3 (10-19 years experience) had significantly larger factor 1 and 2 scores than group 2 (4-9 years experience) and also had significantly larger factor 8 scores than group 1 (3 or less years experience). Group 4 (20 years experience or more) had a significantly higher morale score than either groups 1 and 2 for factor 2. Scheffé's test did not reveal any significant differences for factors 9 and 10; however, the more experienced groups (3 and 4) had higher morale scores than the less experienced groups (1 and 2).

Teaching Assignment. When teachers were grouped according to teaching assignment, no significant differences in morale scores were found when factors 1, 3, 9 and 10 were used as the criteria. A significant difference was found between elementary (K-8) and secondary (9-12) teachers when factors 2, 4, 6, 7, 8, and total score were used

as the criteria. Where significance was found, elementary teachers had higher morale scores than secondary teachers.

New or Returning Teachers to the School District. When teachers were grouped according to whether they were new or returning to the school district, no significant differences were found on any of the factor scores or total score.

Accreditation Level. When teachers were grouped according to their school district's accreditation rating, no significant differences in morale were found on any of the PTO factor scores or total score.

Teacher Turnover. When teachers were grouped according to their school district's rate of teacher turnover, no significant differences were found when factors 1, 3, 8 and 10 were used as the criteria. Significant differences in morale scores were found when factors 2, 4-7, 9 and the total score were used as the criteria. Where significance was found, group 1 (0-15 per cent) had significantly higher morale scores than group 2 (16-28 per cent). Group 1 also had significantly higher morale on factor 4 than group 3 (29 per cent or more).

Faculty Size. When teachers were grouped according to the number of teachers in their school district, no significant differences in morale scores were found when the PTO factors 1, 8, and 10 were used as the criteria. Significant differences in morale scores were found when factors 2-7, 9, and total score were used as the criteria. When significance was found, group 3 (34 or more teachers) had significantly higher morale than groups 1 (16 or fewer teachers) or 2 (17-33 teachers), except for factor 9 which found significance between only groups 2 and 3.

Discussion and Conclusions

The first objective of this study concerned itself with the question as to which biographical variables best predict morale as determined by the PTO factor scores and total score.

If one considers the PTO total score as the best overall measure of morale, then educational preparation, years teaching experience and age were the significant predictors of morale. However, if one considers the biographical variable that was significant on the greatest number of PTO factor scores and total score, then years teaching experience and teacher turnover emerged as the best predictors. Years teaching experience had significant predictability on factors 1, 2, 5, 9 and 10. See Table 15 for a summary of the stepwise backward procedures when the PTO total score and factor scores were used as the criteria and the nine biographical variables as the predictor variables.

Because the stepwise backward elimination procedure does not provide directional information, discussion regarding individual biographical variables will be considered later in this section.

A major consideration of this study was to determine the effect salary has upon teacher morale. No significant differences were found among teachers grouped by salary levels on the PTO total score and 9 of the 10 factors. However, a significant difference was found on the factor 2 variable of satisfaction with teaching. Contrary to what one might expect, teachers having the smallest salary had the highest morale. This observation also held true for each of the non-significant variables. It appears that salary has little effect on

morale. Apparently teachers in the research sample teach for reasons other than salary as measured by the amount of salary received.

Locke's (1968, pp. 11-12) explanation perhaps best elucidates the results found:

> In our culture at least there is no limit to the amount of pay that most men would like (ideally) to have. Human wants, are, for all practical purposes unlimited. . . . However, individuals do not use infinite wealth as their sole standard in evaluating their pay. They also appraise it in terms of the perceived discrepancy between it and the minimum pay required to fulfill their present needs (or their pay relative to that of other people around them doing similar work). Their pay satisfaction results from comparing their actual pay with both their "practical ideal" (minimum adequate) and the amount that would fulfill all of their economic wants (ideal maximum).

Locke asserts that the above discussion is true for both men and women. Apparently men and women view salary quite similarly. Richardson and Blocker's (1963) admonition about studies which emphasized a single factor, such as salary, as being the most important determinant or the only major aspect of morale, apparently is true.

When the amount of salary increase was considered as a variable which might affect morale, the findings were more like those anticipated. No significant differences were found on the PTO total score or factors 1-3 and 5-10. However, the PTO factor 4 variable of satisfaction with salary was significant beyond the .05 level. The finding was as one might expect, the greater the salary increase the more satisfaction teachers had with their salary and the school's salary policies. It could be surmised that the per cent of salary increase is a better index of satisfaction with salary than is actual salary received. However, more research would have to be conducted to determine whether this assumption has any merit.

When selected biographical variables were used to assess their effect on morale, various conclusions seem to be warranted. The age of a teacher apparently has little or no influence on morale. Previous research by Gubser (1969), Ehresman (1969) and an article titled, "Are teachers satisfied with their working conditions," in the National Education Association Research Bulletin (1969) indicated that older teachers were more satisfied with teaching than younger ones. However, these studies did not have experimental control on years of teaching experience and educational preparation. It appears that age is closely correlated to teaching experience and educational preparation. Therefore, any studies of morale conducted on the age variable, should have experimental control on educational preparation and teaching experience.

Female teachers have higher morale than male teachers. Significance was found on factors 2, 7, and 8; however, females had higher PTO scores on all of the PTO variables. These findings support earlier research that female teachers have higher morale than male teachers. Women teachers apparently are more satisfied with teaching than are men teachers because they feel they have greater status in the community and that the community more strongly supports education. A possible explanation for these observations is that among the population as a whole, the teaching profession for women is a more respected and better paid profession than most professions or occupations in which women are engaged in; thus women are accorded considerable respect as teachers by both men and women. This is not necessarily so for male teachers because of the more prestigious and better paying occupations available to men. Working with children may also be a more satisfying experience for women than for men teachers.

Teachers with the least amount of education are more contented with teaching than those who have more education. Teachers with less than a B.A. Degree had higher morale scores on factors 1, 2, 5-8 and total score than either B.A. or M.A. Degree teachers. No significant difference was found between B.A. and M.A. Degree teachers. A possible explanation for these findings is that individuals with less than a Bachelor's Degree realize that they have less opportunity for further professional advancement, and consequently rationalize their contentment with teaching and their present situation. Another alternative might be that the non-degree teachers are more content with their present situation, and thus will not be as disturbed with factors in their environment which they cannot control. A non-degree teacher is usually a woman and teaches in the elementary school. These two factors may account for the results obtained and possibly should have been experimentally controlled.

Experienced teachers have higher morale scores than the inexperienced or less experienced teacher. Significant differences were found on factors 1, 2, 8, 9 and total score. However, mean morale scores for the experienced teachers were also higher on the non-significant PTO scores. Apparently as one gains in teaching experience, one also becomes more satisfied or contented with one's job. Another possible explanation might be that dissatisfied teachers do not remain in teaching for long periods of time.

Elementary teachers are more satisfied with teaching than secondary teachers. Elementary teachers had significantly higher morale scores on factors 2, 4-8 and total score than secondary teachers.

Elementary teachers also had higher mean morale scores on the remaining non-significant PTO scores. Since sex was not controlled for this variable, it is possible that the reason for significance was a result of the greater number of female teachers in the elementary school. Nevertheless, the findings support earlier research that elementary teachers have higher morale than secondary teachers.

Another possible explanation for elementary teachers being more satisfied with teaching is that in the elementary setting the relationship between student and teacher is closer. The work of the elementary teacher may also be more satisfying than the work of the secondary school teacher. Elementary teachers feel they are better paid probably because there are more women in the elementary schools than in the secondary schools. Their salary may supplement their husbands' income and therefore is not as important to them. Elementary teachers may also be more dedicated to teaching and therefore are more contended with their teaching load, curriculum, community, and status.

Teachers from schools having the lowest per cent of teacher turnover had significantly higher morale scores on factors 2, 4-7, 9 and total score than did teachers from schools with higher rates of teacher turnover. The teachers from schools with low teacher turnover also had higher mean morale scores on the non-significant PTO scores than teachers from schools with higher teacher turnover. Teachers in schools with low turnover, when compared to teachers in schools with high turnover, tend to be more satisfied with teaching, salary, teaching load and the school's curriculum. They also are more satisfied with the school's facilities and services and have an overall higher morale.

Faculty size is closely related to morale. Faculties of 34 or more had significantly higher morale scores on factors 2 through 7, 9 and total score than groups 1 (0-16 teachers) and 2 (17-33 teachers). However, no significant differences were found between groups 1 and 2. This is probably so because larger schools may be able to offer better working conditions and salary. The larger school is more able to reduce the teachers load in terms of extra-curricular activities, community demands on teacher time, and clerical work. Larger schools are financially able to offer a better curriculum as well as the facilities and services that go with it. Teachers in larger schools seemingly are accorded more respect and status and feel they are better accepted by the community than are teachers in smaller schools.

Some interesting observations can be made relative to the school size factor by comparing the results of the Purdue Teacher Opinionaire reliability study means (see Table 2) with the overall means obtained for the present investigation (see Chapter IV). Table 56 presents the data to facilitate discussion.

Table 56 discloses that the PTO reliability study had higher means on nine of the possible eleven PTO scores. No difference in means was observed on the factor 8 variable of community support of education. The present investigation was found to have higher mean morale scores on only one factor, the factor 3 variable of rapport among teachers. Since the reliability study was concerned with teachers from a more urban or larger school setting than the present study, it can be reasonably concluded from the results of the two studies that teachers who work in larger schools or more urban

settings have higher morale. This observation must, of course, be limited to the present comparison. However, it does support the present investigation's findings that teachers in larger school systems have higher morale than teachers in smaller school systems.

TABLE 56

MEANS FOR THE PTO TEST-RETEST RELIABILITY STUDY AND THE OVERALL MEANS FOR THE PRESENT STUDY

Factor	Reliability Study Pre N=3023	Reliability Study Post N=3023	Present Study N=545
1. Teacher Rapport with Principal	62.26	61.26	57.31
2. Satisfaction with Teaching	69.00	68.30	62.68
3. Rapport Among Teachers	41.60	41.94	42.24
4. Teacher Salary	18.59	18.77	16.88
5. Teacher Load	34.98	34.90	30.54
6. Curriculum Issues	14.78	14.66	13.06
7. Teacher Status	23.49	23.71	21.18
8. Community Support of Education	14.62	14.66	14.73
9. School Facilities and Services	13.47	13.64	12.23
10. Community Pressures	16.37	16.22	15.52
Total Score	312.49	311.28	255.72

A profile of the teacher with high morale would show that the teacher is a woman, has less than a B.A. Degree, teaches in the elementary school, and has ten or more years of teaching experience. She also teaches in a large school system with a low rate of teacher turnover.

Recommendations

From the results of this study the following recommendations are made:

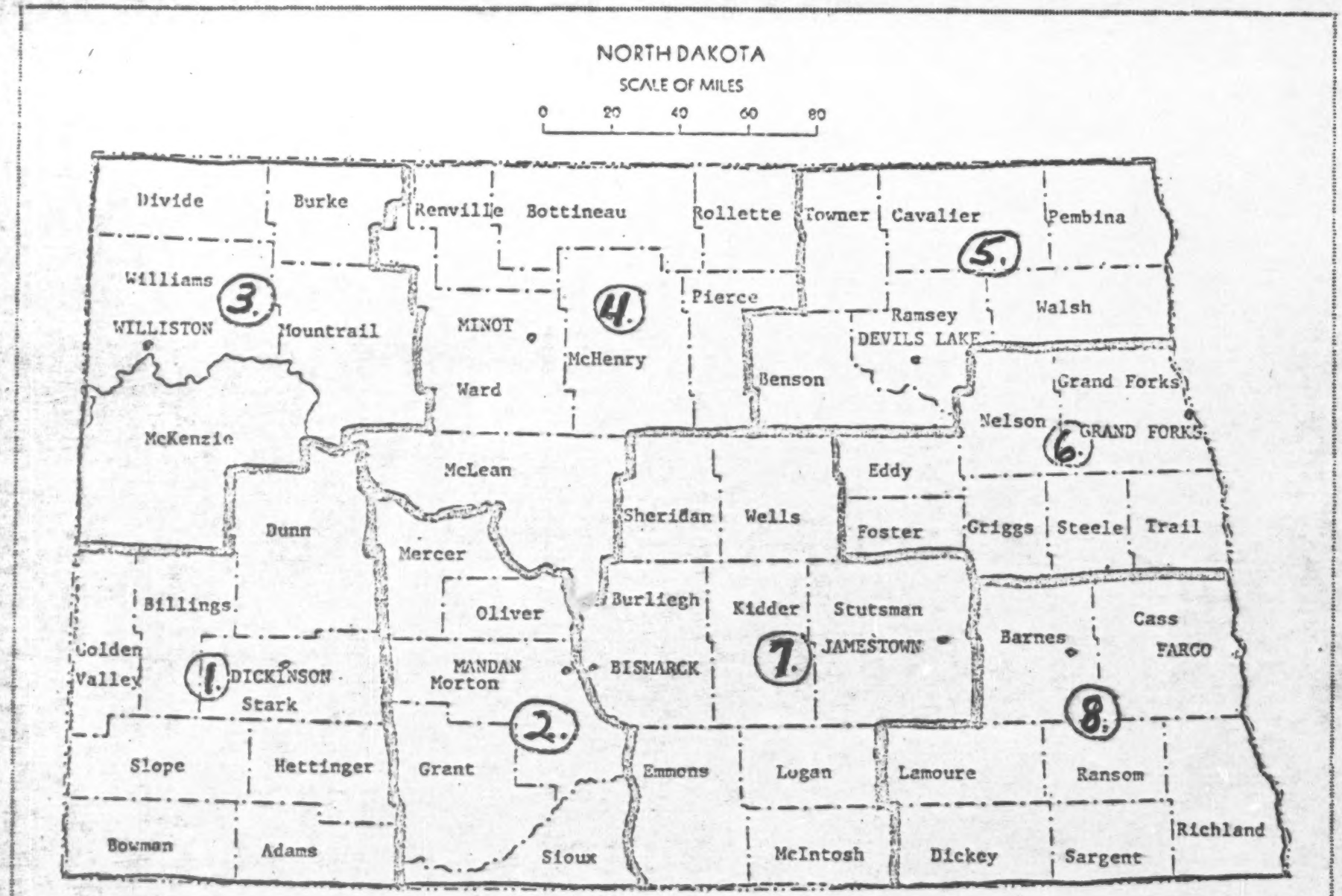
1. Teachers, administrators, school boards, and state departments of education should be alerted to the factors and conditions which contribute to low teacher morale.

2. Teachers, administrators and school boards should conduct joint studies of teacher morale in their districts to determine its status and, if low teacher morale exists, take positive action to improve it.

3. Further studies of the morale of rural teachers should be conducted. Future studies should attempt to determine the effect of morale on teacher productivity, student achievement, and student motivation.

4. Professional teacher organizations should study morale in order to better provide for the general welfare of the teachers they serve.

5. Future studies of morale which use the Purdue Teacher Opinionaire factor scores and total score as the criteria, with analysis of covariance procedures, should consider using the significant biographical predictors of each PTO factor score as the control variables when that same factor is used as the criterion.



Eight Regions for Sampling Purposes
for Assessment of Educational Needs

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COOPERATING SCHOOLS AND SUPERINTENDENTS

Name of School District	District Number	Superintendent
Anamoose	14	William Bengson
Aneta	20	Alfred Borah, Jr.
Ashley	9	Bruce McShane
Balta	7	James DeSchneau
Braddock	7	Larry Durand
Carrington	10	A. K. Johnson
Central Cass	17	Jerome Tjaden
Columbus	34	James Peterson
Courtenay	24	Reynold Buchholz
Drake	57	Richard Grose
Epping	88	Eugene Burns
Grace City	16	Daniel Schutte
Guelph	39	Marlo Byberg
Kenmare	28	Lloyd Fandrich
Lankin	39	Ray Aafedt
Leeds	6	Francis Bell
Linton	36	Clifford Johnson
Maxbass	28	Roy Fee
McClusky	19	John Hegvik
McKenzie	1	Robert Molland
Mercer	56	Alfred Lowe
Midway	128	Perley Draffehn
Milton	30	Robert Murray
Minnewaukan	5	Ronald Broeker
Montpelier	14	Donald Grinolds
Newburg	48	Cecil Roberts
New Salem	7	A. A. Engelhardt
New Town	1	Sam Keeney
North Central	65	Ordean Lindemann
Oak Grove		Walter Reitan
Oberon	16	Orville Faber
Rhame	17	Lawrence Sailer
Richland	44	LeRoy Bowman
Roosevelt	18	Donald Johnston
St. James		Sister Mary Thomas
Scranton	33	Lewis Getz
Sentinel Butte	2	John Weaver
Sheldon	2	Alfred Berntson
Sims	8	Robert Oberg
Strasburg	15	G. H. Berglund
Twin Butte	1	Keith Thunem
United	7	Lowell Loffelmacher
Verona	11	Frank Benson
Walhalla	27	Peter Gefroh
Warwick	29	Allan Opoien
Wimbledon	82	Kirk Hansen

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